CHEMICAL AND BIOLOGICAL DATA SUMMARY FOR LAKE 222 OUTFLOW ACIDIFICATION EXPERIMENTS (EXPERIMENTAL LAKES AREA) (MAY 1983)

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CHEMICAL AND BIOLOGICAL DATA SUMMARY FOR LAKE 222 OUTFLOW ACIDIFICATION EXPERIMENTS (EXPERIMENTAL LAKES AREA) (MAY 1983)

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PREFACE

The unpublished Data Report Series is intended as a readily available source of basic data collected for lakes and watersheds in Ontario. These data were collected as part of the Acid Precipitation in Ontario Study.

The Acid Precipitation in Ontario Study (1979 - present) was initiated, in part, to investigate the effects of the deposition of strong acids on aquatic and terrestrial ecosystems in Ontario. The primary findings of these studies have been and will continue to be published as reviewed papers and technical reports.

ABSTRACT

The effects of short-term pH depressions on aquatic biota are poorly documented. This data report presents the physical, chemical, and biological data from an acidification experiment conducted on the outflow of Lake 222 in the Experimental Lakes Area of Northwestern Ontario, an area not normally exposed to such pH depressions. Samples were also collected from a lake outflow that has experienced long-term artificial pH depression (Lake 223) and one that has not been impacted in any way (Lake 224). A detailed description of the methods for the collection of the biotic data is also included.

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INTRODUCTION

Spring snowmelt and acidic rainstorms cause short-term pH depressions to pH's as low as 4.0 in poorly buffered Canadian Shield streams (Jeffries et al, 1979; Scheider et al, 1979). Most aquatic organisms will not tolerate prolonged exposure to such low pH (Dillon et al, 1984), but very little quantitative data exist about the effects of short-term pH depressions on aquatic biota in Canada. A previous study (Findeis and Coleman-Taylor, 1988) documented the effects of episodic pH depressions (4.8-4.2) on stream invertebrate communities in southern Ontario where these stresses commonly occur (LaZerte and Dillon, 1984). Due to geographic location and low acidic deposition in northwestern Ontario (Dillon et al, 1984), the aquatic communities of the Experimental Lakes Area (ELA) are not normally exposed to such low pH's. This study was initiated to determine the sensitivity of aquatic biota to short-term pH depressions in an area where severe hydrogen ion stress does not occur (ELA, near Kenora, Ont.). In this manner we can assess what species, if any, have been eliminated due to acidification in south-central Ontario (Findeis and Coleman-Taylor, 1988). Drift and benthic density, as well as various pH dependent chemical parameters were monitored. This report includes detailed methods as well as chemical and biological data collected for this study.

STUDY SITE

Lake 222 (93 44'W,49 41'N) is a small 17.5 hectare lake located on the Canadian Shield in northwestern Ontario. Bedrock in the area surrounding Lake 222 is precambrian granite overlain in some areas by thin glacial sand and gravel (Brunskill and Schindler, 1971). Jack pine, black spruce and trembling aspen are the dominant tree species. The outflow of Lake 222 joins with Lake 223 outflow 450 metres downstream of Lake 222 (Fig 1). It continues through a series of lakes and rivers to the Winnipeg River and on into Hudson Bay.

A 400 metre section of Lake 222 outflow was used for the experiments (Fig. 1). Each experiment was divided into a 100 metre reference area and a 100 metre treatment area. Successive experiments were moved upstream 100 metres to a previously unimpacted section of stream. Due to the length of the stream, it was necessary for the reference area of experiments 1 and 2 to become the treatment areas of experiments 2 and 3 (Fig 1).

METHODS

To determine what effect, if any, short-term acidification has on aquatic communities, reagent grade sulphuric and hydrochloric acids were mixed and added to the stream to achieve three different pH levels (pH 4.5, 4.0 and 5.0) for four day periods. pH levels were monitored regularly at a location 10 metres downstream of acid addition where complete mixing of acid and streamwater was assured. Water samples for chemical analysis were taken every 12 hours during acidification. Samples were collected from locations 2 metres upstream of acid addition (site

A), and at 15 (site B), 30 (site C), and 100 metres (site D) downstream of the acid drip point. Samples taken prior to acid addition were used to establish background chemistry values. Benthic core samples were collected before and after acid addition in both the acidification and reference areas to assess the impact of acidification. Drift samples from sites A, B, C and D were collected at 12 hour intervals prior to and during acid addition. Water temperatures (Fig. 2) were taken at 12 hour intervals using a Taylor max/min thermometer. Stream discharge was determined using a Teledyne Gurley water current meter every 12 hours above site A and below site C for the duration of the experiments (Fig 3).

WATER CHEMISTRY

Sulphuric and hydrochloric acids were added to the stream to achieve the desired pH depressions. Sulphates are the dominant anthropogenic source of acidic deposition (Lazerte and Dillon, 1984), and are the reason for the addition of sulphuric acid. Hydrochloric acid was added as a chemical tracer to evaluate the relative importance of cation exchange, Al dissolution, and groundwater dilution (Hall et al, 1987). Speciation of Al was done to determine dominant fractions above and below acid addition. Inorganic monomeric fractions of Al are thought to be the toxic species to aquatic biota (Driscoll et al, 1980). Methods used for the analysis of samples in Ministry of the Environment (MOE) labs are outlined in Locke and Scott (1986), and the Ontario Ministry of the Environment Handbook of Analytical Methods for Environmental Samples (1983). Tables 1 through 13 contain the chemistry results from the three experiments.

BENTHIC SAMPLES

Benthic samples were collected using a cylindrical core sampler. The 0.0314 m^2 sampler was placed into the stream bed to a depth of 0-15 cm depending on bottom type (see Hall et al, 1980). Sediments were repeatedly hand agitated, and suspended organisms collected with a hand net until no more organisms were observed. Samples were preserved in 10% formalin. Numbers of insects were multiplied by 31.8 to convert to number of insects per square metre.

An optimal impact study design (Green, 1979) was used to determine what effect, if any, short-term acidification has on aquatic communities. Each of the three experiments was divided into a 100 metre reference area and a 100 metre acidification area. Approximately twenty core samples were collected from each section prior to (pretreatment) and immediately after acidification (post treatment). Since the reference area of each experiment became the acidification area of the next experiment, samples collected in these areas were used in both experiments. Therefore, some cores in the detailed tables (25 and 27, 28 and 30) and in the summary tables (16 and 18, 19 and 21) are the same.

Where possible, samples from different areas unaffected by the influence of acid addition were combined. The detailed pretreatment data tables from each experiment (Tables 24, 27 and 30) have been combined. As well, summary tables from these areas (Tables 15, 18 and 21) have been combined. To increase sample size of the post treatment reference areas, samples were combined with the pretreatment samples from the same area (Detailed tables 24 and 25, 27 and 28, 30 and 31; Summary tables 15 and 16, 18 and 19, 21 and 22).

Benthic samples were taken from two other lake outflows. Lake 223 has been artificially acidified since 1976 and was being held at pH 5.0 - 5.1 in 1983 (France, 1987). Lake 224 and its outflow were not acidified. The benthic data collected at these sites will be used to make comparisons between a stream showing effects of short-term acidification (4 days), a stream showing effects of long-term acidification (4 to 5 years) and one that shows no acidification effects.

All benthic data from Lake 222 outflow can be found in tables 15 through 32. Benthic data from Lakes 223 and 224 outflows is contained in tables 41 to 44.

DRIFT STUDIES

Drift nets, consisiting of a 3/4 inch acrylonitrile-butadiene-styrene (ABS) frame and 273 micron Nitex screen (Waters, 1962), were placed from bank to bank at sites A, B, C and D. A rectangular wooden block, covered with the same mesh size used for the drift nets, was placed 100 metres upstream of site A to prevent invertebrates from drifting into the study area. A similar block was placed 2 metres below the acid drip point to prevent the organisms exposed to lower pH levels from being collected at site B. Two days before the completion of each experiment, the upstream block was replaced by drift nets to collect pretreatment data for the next experiment.

The nets were emptied at 12 hour intervals 2 days prior to, and 4 days during each experiment. Two - 12 hour samples were combined at each site to give 24 hour estimates. Invertebrate drift at each station was converted to numbers/100m^3/day (numbers/100m^3/day = $n/Q(x/y)$ where n = number of organisms collected, Q = discharge in litres/second, x = number of seconds

in one day and y = number of litres in 100 cubic metres). A summary of the drift numbers is located in Tables 33 through 40.

INVERTEBRATE SUBSAMPLING PROCEDURE

In the laboratory, bottom and drift samples were washed through a Stewart elutriator (1975). Cased caddisflies and molluscs were picked from the residual gravel. Elutriated samples from each station were thoroughly mixed and washed through a series of graduated sieves (0.6 - 0.1 mm aperture size) to remove the larger pieces of organic debris. Organisms retained by the 0.6 mm mesh were counted individually.

The remaining fine materials were mixed well in 1 L of water and allowed to settle in a circular sieve with a mesh size of 0.01 mm. When the material had drained well it was divided into quarters with a cross-shaped partition made to fit snugly into the sieve. If necessary, a further 1/4 subsample was taken by the same method. Both the larger specimens and those in the subsamples were examined microscopically, identified, (Merritt and Cummins, 1984) and counted.

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FIGURE 1. LOCATION OF STUDY SITE AND SAMPLING SITES.

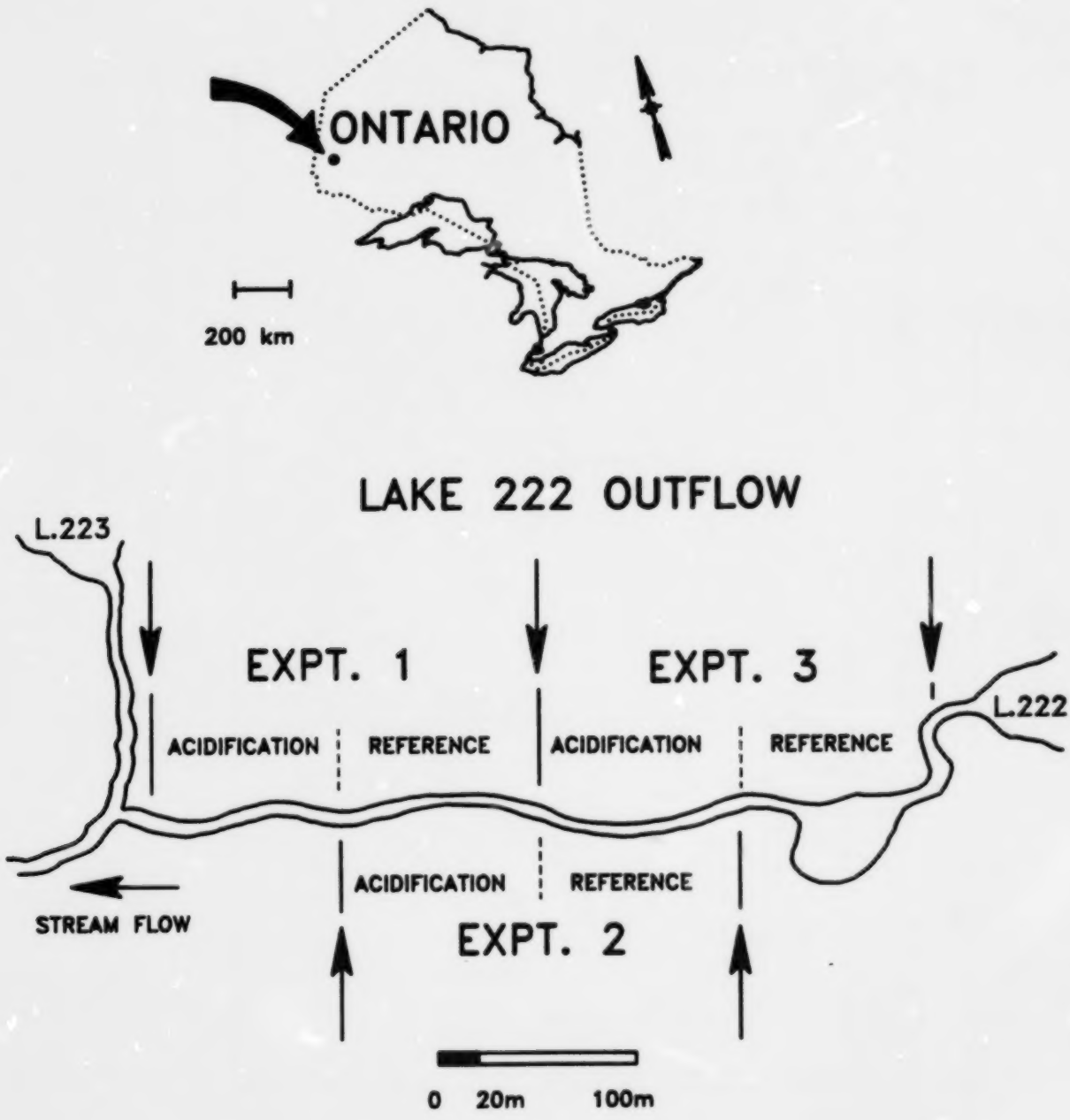
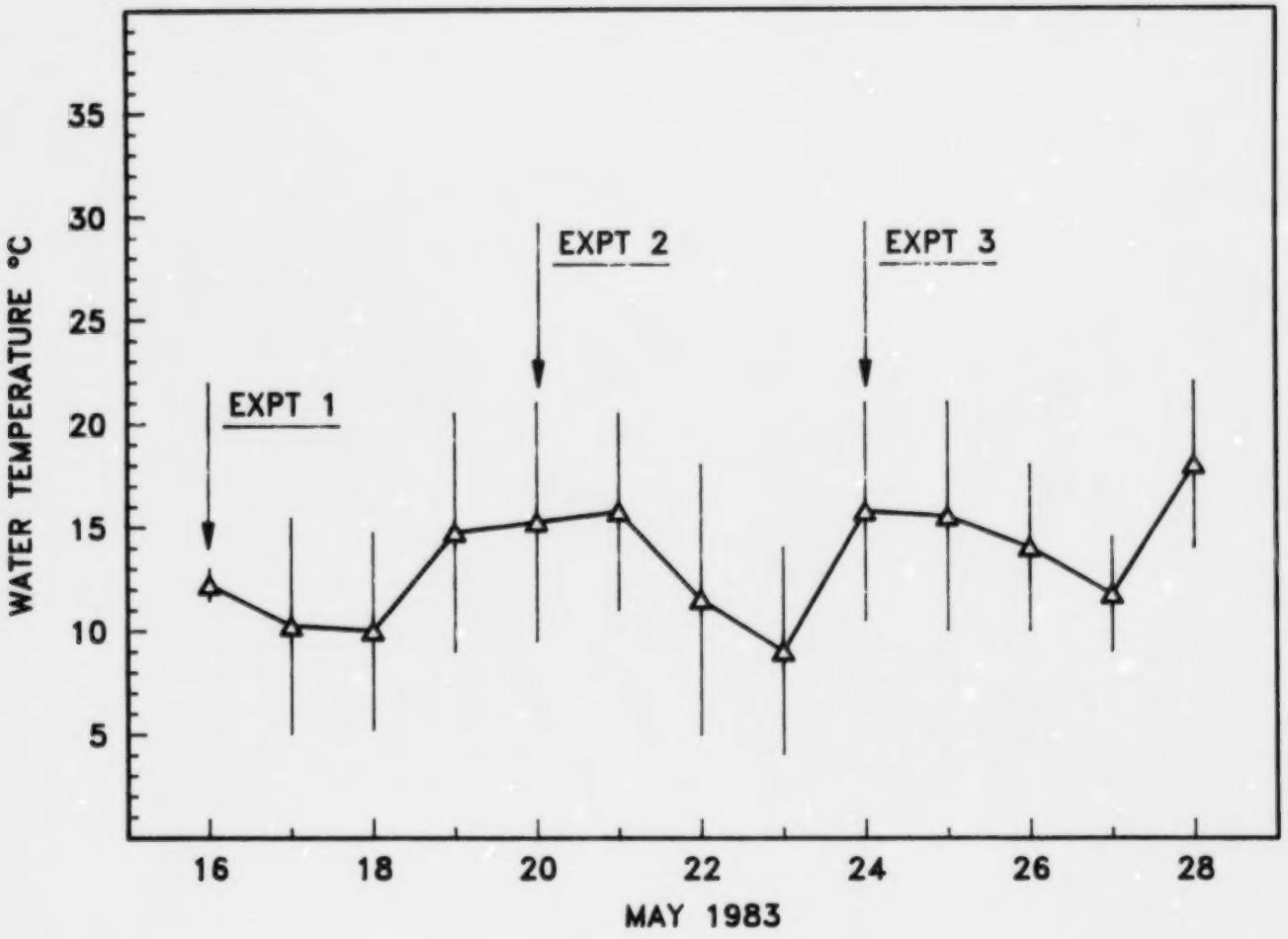


FIGURE 2. MEAN AND RANGE OF DAILY WATER TEMPERATURES.



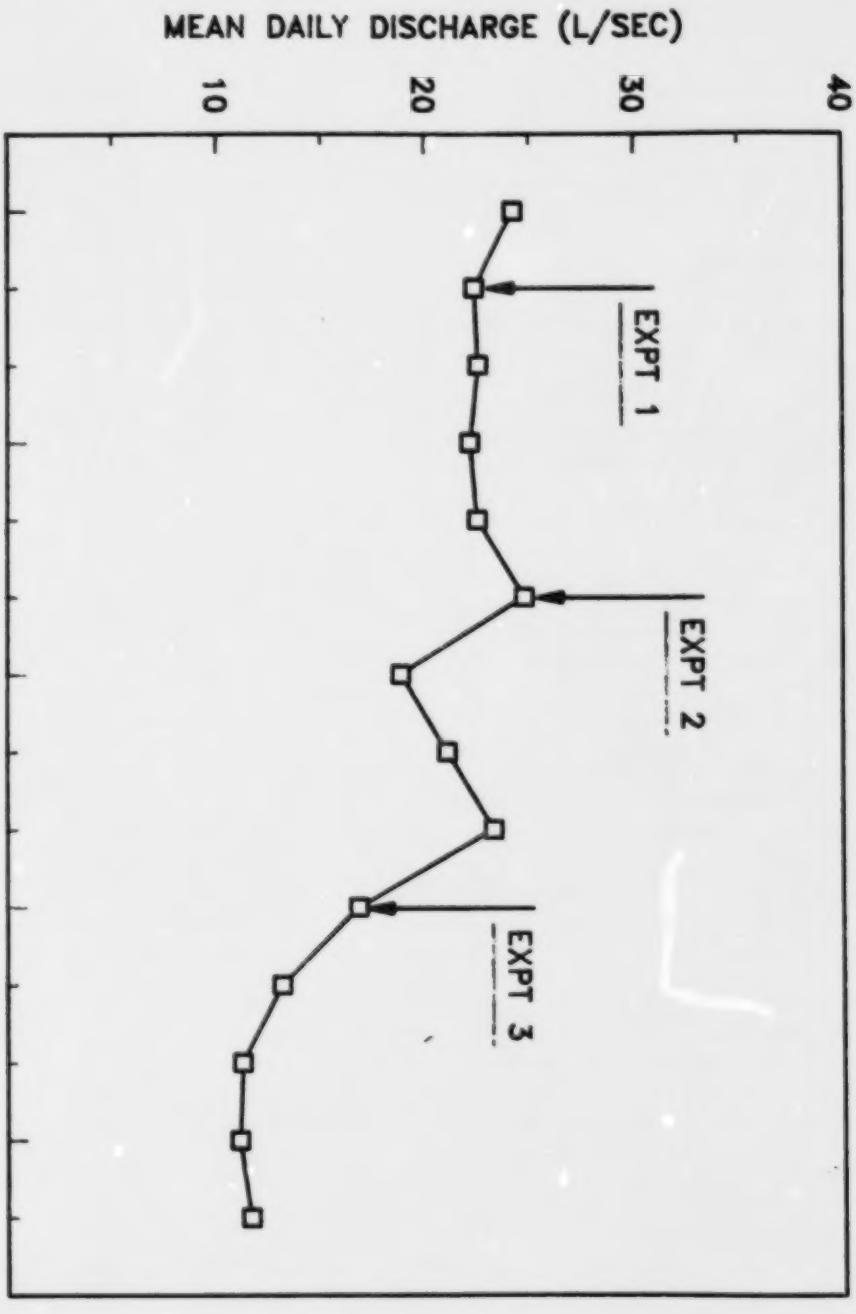


FIGURE 3. MEAN OF UPSTREAM AND DOWNSTREAM DISCHARGES.

Table 1. Abbreviations, descriptions and units of measure for water chemistry parameters.

Abbreviation	Description	Reported units
pH	pH	dimensionless
Alk	Total inflection point alkalinity	mg/L as $CaCO_3$
Ca	Calcium	mg/L
Mg	Magnesium	"
Na	Sodium	"
K	Potassium	"
H_4SiO_3	Silicates as Si	"
Cl	Chloride	"
SO_4	Sulphate	mg/L as SO_4
DOC	Dissolved organic carbon	"
DIC	Dissolved inorganic carbon	"
NH4-N	Ammonium	ug/L as N
NO3-N	Nitrate and nitrite	"
F	Fluoride	ug/L
FF	Free fluoride	"
Al	Total aluminum	"
Al 1	Inorganic monomeric aluminum	"
Al 2	Total monomeric aluminum	"
Fe	Iron	mg/L
Mn	Manganese	"
Zn	Zinc	"
Cond23	Conductivity (at 23° C)	uS/cm
Cond25	Conductivity (at 25° C)	"
P	Total phosphorus	ug/L
As	Arsenic	mg/L
Cd	Cadmium	"
Co	Cobalt	"
Ni	Nickel	"
Pb	Lead	"
Cu	Copper	"
Cr	Chromium	"

Symbols used to indicate values below detection limits.

*** <.003 mg/L
** <.0002 mg/L
* <.001 mg/L

Table 2. Chemistry results from site A (reference area) of experiment 1 (pH depressed to 4.5).

	date	time	pH	Alk ug/L	Ca ug/L	Mg ug/L	Na ug/L	K ug/L	Cl ug/L	SIO3 ug/L	SO4 ug/L	DOC ug/L	DIC ug/L
Pretreatment	May 15/83	1500	6.92	10.67	3.7	0.90	1.35	0.56	0.30	2.35	3.43	7.0	211
	May 16	830	6.83	10.88	3.7	0.80	1.30	0.56	0.30	2.33	3.22	7.0	219
Reference	May 16	2100	6.88	10.34	3.9	0.88	1.15	0.58	0.31	2.31	2.97	7.4	194
	May 17	900	6.92	11.05	3.3	0.80	1.20	0.58	0.34	2.28	3.06	7.1	201
	May 17	2000	6.86	10.72	3.6	0.82	1.10	0.50	0.30	2.33	2.95	7.2	197
	May 18	800	6.88	10.94	3.4	0.84	1.05	0.52	0.30	2.33	2.73	7.2	197
	May 18	2000	6.87	10.44	3.5	0.88	1.00	0.56	0.30	2.34	2.81	7.2	194
	May 19	800	6.88	10.89	3.2	0.84	1.10	0.54	0.29	2.38	2.78	7.1	209
	May 19	2000	6.83	10.46	3.0	0.82	0.95	0.48	0.30	2.35	2.69	7.1	217
	May 20	800	6.85	10.85	2.9	0.92	0.95	0.52	0.31	2.37	2.78	7.0	241
MEAN			6.87	10.71	3.4	0.85	1.06	0.53	0.31	2.34	2.85	7.2	206
S.D.			0.02	0.25	0.3	0.04	0.09	0.03	0.01	0.03	0.12	0.1	15

	date	time	NH4-N ug/L	NO3-N ug/L	PP ug/L	F ug/L	Al ug/L	Al 1 ug/L	Al 2 ug/L	Fe mg/L	Mn mg/L	Zn mg/L
Pretreatment	May 15	1500	0.022	0.030	41.0	38.5	46	1.1	6	0.565	0.042	***
	May 16	830	0.018	0.030	38.0	36.9	44	1.1	6	0.480	0.032	***
Reference	May 16	2100	0.016	0.025	44.0	38.4	42	1.1	7	0.380	0.024	***
	May 17	900	0.034	0.025	43.0	37.0	50	1.1	6	0.345	0.021	***
	May 17	2000	0.026	0.025	37.0	39.8	41	1.1	8	0.510	0.026	***
	May 18	800	0.020	0.025	39.0	40.1	42	1.0	6	0.525	0.031	***
	May 18	2000	0.018	0.020	44.0	37.5	42	1.1	7	0.550	0.028	***
	May 19	800	0.018	0.025	43.0	38.5	44	1.1	18	0.510	0.031	***
	May 19	2000	0.022	0.015	42.0	39.0	46	1.1	4	0.500	0.027	***
	May 20	800	0.016	0.010	42.0	38.5	44	1.1	4	0.565	0.034	***
MEAN			0.021	0.021	41.8	38.6	44	1.1	8	0.486	0.028	***
S.D.			0.006	0.005	2.3	1.0	3	0.0	4	0.074	0.004	0.0

	date	time	Cond23 uS/cm	Cond25 uS/cm	P ug/L	As ug/L	Cd ug/L	Co ug/L	Ni ug/L	Pb ug/L	Cu ug/L	Cr ug/L
Pretreatment	May 15	1500	33.0	34.5	10	-	-	-	-	-	-	-
	May 16	830	32.0	34.0	11	-	-	-	-	-	-	-
Reference	May 16	2100	35.0	35.5	8	-	-	-	-	-	-	-
	May 17	900	35.0	35.5	8	-	-	-	-	-	-	-
	May 17	2000	37.0	36.5	9	*	**	*	0.001	***	0.002	0.001
	May 18	800	36.0	35.5	8	-	-	-	-	-	-	-
	May 18	2000	-	38.5	8	-	-	-	-	-	-	-
	May 19	800	-	35.0	7	-	-	-	-	-	-	-
	May 19	2000	32.0	37.0	9	*	**	*	0.001	***	0.002	0.001
	May 20	800	31.0	36.0	9	-	-	-	-	-	-	-
MEAN			34.3	36.2	8	*	**	*	0.001	***	0.002	0.001
S.D.			2.1	1.1	1	-	-	-	0.000	-	0.000	0.000

Table 3. Chemistry results from site B (treatment area) of experiment 1 (pH depressed to 4.5).

	date	time	pH	Alk ug/L	Ca ug/L	Mg ug/L	Na ug/L	K ug/L	Cl ug/L	SIO3 ug/L	SO4 ug/L	DOC ug/L	DIC ug/L
Pretreatment	May 16/83	830	6.82	10.76	3.9	0.84	1.30	0.58	0.30	2.33	3.15	6.9	212
Treatment	May 16	2100	4.30	-2.60	3.9	0.86	1.15	0.60	5.26	2.28	9.40	7.3	182
	May 17	900	4.45	-1.80	4.5	0.94	1.10	0.60	4.20	2.29	10.59	7.1	174
	May 17	2000	4.24	-3.00	4.6	0.94	1.10	0.52	0.97	2.35	16.03	7.4	181
	May 18	800	4.41	-1.90	3.4	0.94	1.10	0.52	0.79	2.34	14.80	7.4	191
	May 18	2000	4.30	-2.60	4.5	1.00	1.00	0.56	0.54	2.34	15.55	7.2	185
	May 19	800	4.41	-1.90	4.5	0.94	1.20	0.60	0.51	2.38	15.40	7.1	196
	May 19	2000	4.30	-2.80	4.3	0.98	1.05	0.50	0.44	2.35	15.76	7.2	199
	May 20	800	4.48	-1.80	4.0	1.00	1.00	0.54	0.45	2.37	15.43	7.1	212
MEAN			4.36	-2.30	4.2	0.95	1.09	0.55	1.65	2.34	14.12	7.2	190
S.D.			0.08	0.47	0.4	0.04	0.06	0.04	1.81	0.03	2.42	0.1	11

	date	time	NH4-N ug/L	NO3-N ug/L	FF ug/L	F ug/L	Al ug/L	Al 1 ug/L	Al 2 ug/L	Fe mg/L	Mn mg/L	Zn mg/L
Pretreatment	May 16	830	0.016	0.030	38	37.1	48	7.0	9	0.505	0.038	***
Treatment	May 16	2100	0.020	0.025	39	37.4	49	8.0	22	0.505	0.041	***
	May 17	900	0.026	0.025	41	37.0	45	13.0	18	0.430	0.037	***
	May 17	2000	0.024	0.020	36	41.0	54	14.0	24	0.640	0.046	***
	May 18	800	0.020	0.020	40	39.5	48	7.0	15	0.550	0.038	***
	May 18	2000	0.020	0.020	41	38.5	53	8.0	18	0.550	0.034	***
	May 19	800	0.018	0.025	41	36.8	200	7.0	18	0.505	0.035	***
	May 19	2000	0.018	0.010	41	38.0	50	8.0	19	0.515	0.037	***
	May 20	800	0.018	0.015	42	37.0	46	6.0	17	0.520	0.037	***
MEAN			0.021	0.020	40	38.2	68	8.9	19	0.527	0.038	***
S.D.			0.003	0.005	2	1.4	50	2.8	3	0.055	0.004	***

	date	time	Cond23 uS/cm	Cond25 uS/cm	P ug/L	As ug/L	Cd ug/L	Co ug/L	Ni ug/L	Pb ug/L	Cu ug/L	Cr ug/L
Pretreatment	May 16	830	33.5	35.0	10	-	-	-	-	-	-	-
Treatment	May 16	2100	59.0	59.5	9	-	-	-	-	-	-	-
	May 17	900	55.0	55.5	8	-	-	-	-	-	-	-
	May 17	2000	65.5	64.0	11	-	-	-	-	-	-	-
	May 18	800	58.0	57.0	9	-	-	-	-	-	-	-
	May 18	2000	-	60.0	9	-	-	-	-	-	-	-
	May 19	800	-	55.0	8	-	-	-	-	-	-	-
	May 19	2000	54.0	62.0	10	*	**	*	*	***	*	*
	May 20	800	50.0	58.0	8	-	-	-	-	-	-	-
MEAN			56.9	58.9	9	*	**	*	*	***	*	*
S.D.			4.8	2.9	1	-	-	-	-	-	-	-

Table 4. Chemistry results from site C (treatment area) of experiment 1 (pH depressed to 4.5).

	date	time	pH	Alk ug/L	Ca ug/L	Mg ug/L	Na ug/L	K ug/L	Cl ug/L	SIO3 ug/L	SO4 ug/L	DOC ug/L	DIC ug/L
Pretreatment	May 16/83	830	6.86	11.18	3.9	0.88	1.30	0.56	0.30	2.34	2.99	7.0	219
Treatment	May 16	2100	4.37	-2.10	4.0	0.90	1.20	0.60	5.30	0.89	9.00	7.1	173
	May 17	900	4.41	-2.00	4.1	0.96	1.25	0.58	4.25	2.35	10.64	7.4	170
	May 17	2000	4.31	-2.50	4.2	0.88	1.10	0.54	1.02	2.34	15.37	7.3	178
	May 18	800	4.43	-1.90	4.1	0.94	1.20	0.54	0.90	2.35	15.04	7.4	184
	May 18	2000	4.40	-2.60	3.9	0.92	1.35	0.58	0.55	2.35	15.57	7.4	182
	May 19	800	4.40	-1.90	4.4	0.94	1.10	0.58	0.54	2.39	15.46	7.1	187
	May 19	2000	4.33	-2.60	3.4	0.92	0.95	0.50	0.44	2.35	15.71	7.2	201
	May 20	800	4.44	-2.00	3.8	0.96	1.10	0.52	0.43	2.37	15.23	7.0	218
MEAN			4.39	-2.20	4.0	0.93	1.16	0.56	1.68	2.17	14.00	7.2	187
S.D.			0.04	0.29	0.3	0.03	0.11	0.03	1.82	0.49	2.46	0.1	15

	date	time	NH4-N ug/L	NO3-N ug/L	FF ug/L	F ug/L	Al ug/L	Al 1 ug/L	Al 2 ug/L	Fe ug/L	Mn ug/L	Zn ug/L
Pretreatment	May 16	830	0.016	0.030	38	36.7	44	1.0	8	0.470	0.031	***
Treatment	May 16	2100	0.020	0.025	38	38.5	47	18.0	23	0.460	0.040	***
	May 17	900	0.022	0.025	40	37.4	48	8.0	20	0.460	0.040	***
	May 17	2000	0.022	0.025	36	40.8	55	11.0	25	0.620	0.048	***
	May 18	800	0.020	0.025	40	40.8	51	8.0	20	0.571	0.042	***
	May 18	2000	0.020	0.020	41	39.6	44	15.0	25	0.560	0.036	***
	May 19	800	0.018	0.025	41	38.3	52	8.0	22	0.530	0.040	***
	May 19	2000	0.016	0.010	43	39.7	52	7.0	21	0.565	0.039	***
	May 20	800	0.018	0.015	46	36.2	50	7.0	19	0.515	0.038	***
MEAN			0.020	0.021	41	38.9	50	10.3	22	0.535	0.040	***
S.D.			0.002	0.005	3	1.5	3	3.9	2	0.052	0.003	0.0

	date	time	Cond23 uS/cm	Cond25 uS/cm	P ug/L	As ug/L	Cd ug/L	Co ug/L	Ni ug/L	Pb ug/L	Cu ug/L	Cr ug/L
Pretreatment	May 16	830	33.0	34.5	10	-	-	-	-	-	-	-
Treatment	May 16	2100	58.0	58.5	9	-	-	-	-	-	-	-
	May 17	900	56.0	56.5	9	-	-	-	-	-	-	-
	May 17	2000	61.0	60.0	9	*	**	*	0.003	0.004	0.003	0.002
	May 18	800	58.0	57.0	9	-	-	-	-	-	-	-
	May 18	2000	-	61.0	9	-	-	-	-	-	-	-
	May 19	800	-	57.0	8	-	-	-	-	-	-	-
	May 19	2000	54.0	62.0	11	*	**	*	*	***	*	*
	May 20	800	50.0	58.0	8	-	-	-	-	-	-	-
MEAN			56.2	58.8	9	*	**	*	*	***	*	*
S.D.			3.5	1.9	1	-	-	-	-	-	-	-

Table 5. Chemistry results from site D (treatment area) of experiment 1 (pH depressed to 4.5).

	date	time	pH	Alk ug/L	Ca ug/L	Mg ug/L	Na ug/L	K ug/L	Cl ug/L	SIO3 ug/L	SO4 ug/L	DOC ug/L	DIC ug/L
Pretreatment	May 15/83	1500	6.94	10.77	3.7	0.90	1.35	0.56	0.30	2.35	3.43	7.0	210
	May 16	830	6.90	11.00	3.9	0.84	1.20	0.56	0.30	2.31	3.05	7.1	214
Treatment	May 16	2100	4.39	-2.20	4.0	0.94	1.20	0.62	5.50	4.10	9.27	7.0	158
	May 17	900	4.56	-1.40	4.0	0.92	1.25	0.58	4.14	2.36	10.49	7.3	163
	May 17	2000	4.34	-2.30	4.3	0.90	1.10	0.52	0.99	2.34	14.96	7.3	163
	May 18	800	4.43	-1.70	4.0	0.92	1.15	0.54	0.84	2.36	14.98	7.4	165
	May 18	2000	4.37	-2.10	3.7	0.90	1.00	0.58	0.53	2.35	15.42	7.4	165
	May 19	800	4.49	-1.60	4.4	0.94	1.10	0.54	0.55	2.39	15.29	7.0	171
	May 19	2000	4.36	-2.40	3.6	0.94	0.85	0.50	0.48	2.36	15.69	7.1	169
	May 20	800	4.50	-1.70	3.9	0.96	1.00	0.54	0.41	2.36	15.30	7.0	179
MEAN			4.43	-1.93	4.0	0.93	1.08	0.55	1.68	2.58	13.93	7.2	169
S.D.			0.07	0.35	0.3	0.02	0.12	0.04	1.85	0.58	2.37	0.2	10

	date	time	NH4-N ug/L	NO3-N ug/L	FF ug/L	F ug/L	Al ug/L	Al 1 ug/L	Al 2 ug/L	Fe mg/L	Mn mg/L	Zn mg/L
Pretreatment	May 15	1500	0.022	0.030	43	38.5	62	1.1	6	0.565	0.042	***
	May 16	830	0.016	0.030	38	36.7	46	1.0	7	0.550	0.042	***
Treatment	May 16	2100	0.022	0.025	39	36.1	69	6.0	24	0.480	0.048	***
	May 17	900	0.036	0.030	41	37.0	48	6.0	31	0.535	0.049	***
	May 17	2000	0.022	0.025	37	40.5	58	12.0	24	0.620	0.048	***
	May 18	800	0.020	0.025	40	40.2	51	10.0	21	0.520	0.045	***
	May 18	2000	0.020	0.020	40	39.5	55	10.0	24	0.571	0.048	***
	May 19	800	0.018	0.025	41	36.4	52	6.0	22	0.500	0.043	***
	May 19	2000	0.018	0.010	42	38.8	49	7.0	20	0.535	0.046	***
	May 20	800	0.018	0.020	43	36.5	49	5.0	19	0.520	0.045	***
MEAN			0.022	0.023	40.1	38.1	54	7.8	23	0.535	0.047	***
S.D.			0.006	0.006	1.8	1.7	7	2.4	3	0.041	0.002	0.0

	date	time	Cond23 uS/cm	Cond25 uS/cm	P ug/L	As mg/L	Cd mg/L	Co mg/L	Ni mg/L	Pb mg/L	Cu mg/L	Cr mg/L
Pretreatment	May 15	1500	33.5	35.0	10	-	-	-	-	-	-	-
	May 16	830	33.0	34.5	13	-	-	-	-	-	-	-
Treatment	May 16	2100	57.0	57.5	10	-	-	-	-	-	-	-
	May 17	900	52.0	52.5	10	-	-	-	-	-	-	-
	May 17	2000	60.0	59.0	9	*	**	*	0.001	***	*	0.001
	May 18	800	58.0	57.0	10	-	-	-	-	-	-	-
	May 18	2000	-	59.0	10	-	-	-	-	-	-	-
	May 19	800	-	56.0	8	-	-	-	-	-	-	-
	May 19	2000	53.0	61.0	9	*	0.0006	*	*	***	*	*
	May 20	800	49.0	56.0	9	-	-	-	-	-	-	-
MEAN			54.8	57.3	9.4	*	**	*	*	***	*	*
S.D.			3.8	2.4	0.7	-	-	-	-	-	-	-

Table 6. Chemistry results from site A (reference area) of experiment 2 (pH depressed to 4.0).

	date	time	pH	Alk mg/L	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SIO3 mg/L	SO4 mg/L	DOC mg/L	DIC mg/L
Pretreatment	May 15/83	1500	6.93	10.71	3.9	0.86	1.30	0.54	0.30	2.31	3.12	7.2	208
	May 20	800	6.92	11.05	3.0	0.84	0.95	0.54	0.30	2.36	2.73	7.1	225
Reference	May 20	2000	6.93	10.66	3.0	0.82	1.20	0.50	0.32	2.25	3.08	7.2	236
	May 21	800	6.90	10.96	3.0	0.80	1.20	0.50	0.31	2.30	2.89	7.3	249
	May 21	2000	6.82	10.28	3.5	0.84	1.25	0.52	0.27	2.23	2.98	7.0	216
	May 22	800	6.91	11.09	3.2	0.86	1.20	0.48	0.26	2.25	19.36	7.1	234
	May 22	2000	6.91	10.33	2.9	0.76	1.20	0.52	0.30	2.27	3.02	7.2	203
	May 23	800	6.87	10.64	2.9	0.80	1.00	0.48	0.30	2.30	2.99	7.0	212
	May 23	2000	6.86	10.08	3.3	0.82	1.20	0.56	0.35	2.20	2.91	7.3	215
	May 24	800	6.80	10.97	3.3	0.86	1.15	0.56	0.32	2.22	2.90	7.2	227
MEAN			6.88	10.63	3.1	0.82	1.18	0.51	0.30	2.25	5.02	7.2	224
S.D.			0.04	0.34	0.2	0.03	0.07	0.03	0.03	0.03	5.42	0.1	14

	date	time	NH4-N ug/L	NO3-N ug/L	FF ug/L	F ug/L	Al ug/L	Al 1 ug/L	Al 2 ug/L	Fe mg/L	Mn mg/L	Zn mg/L
Pretreatment	May 15	1500	0.014	0.025	40.0	38.6	41	-	-	0.520	0.039	***
	May 20	800	0.020	0.020	41.0	37.0	42	1.1	5	0.520	0.037	***
Reference	May 20	2000	0.024	0.010	44.0	38.8	42	1.1	1	0.560	0.042	***
	May 21	800	0.016	0.015	44.0	39.0	45	1.1	1	0.495	0.031	***
	May 21	2000	0.022	0.010	45.0	43.2	40	1.1	1	0.520	0.034	***
	May 22	800	0.016	0.015	43.0	37.1	44	1.0	1	0.480	0.032	***
	May 22	2000	0.024	0.010	45.0	40.6	39	1.1	3	0.455	0.026	***
	May 23	800	0.014	0.015	44.5	38.9	37	1.1	3	0.500	0.039	***
	May 23	2000	0.022	0.010	58.0	39.2	41	1.1	3	0.470	0.028	***
	May 24	800	0.010	0.010	52.0	37.5	38	1.1	3	0.455	0.032	***
MEAN			0.019	0.012	46.9	39.3	41	1.1	2	0.492	0.033	***
S.D.			0.005	0.002	4.9	1.8	3	0.0	1	0.033	0.005	0.0

	date	time	Cond23 uS/cm	Cond25 uS/cm	P ug/L	As mg/L	Cd mg/L	Co mg/L	Ni mg/L	Pb mg/L	Cu mg/L	Cr mg/L
Pretreatment	May 15	1500	32.5	34.0	10	-	-	-	-	-	-	-
	May 20	800	32.0	36.0	7	*	**	*	*	***	*	0.001
Reference	May 20	2000	34.0	35.5	8	-	-	-	-	-	-	-
	May 21	800	34.5	36.0	7	-	-	-	-	-	-	-
	May 21	2000	25.0	33.5	9	*	**	*	0.004	***	0.005	*
	May 22	800	25.0	33.5	8	-	-	-	-	-	-	-
	May 22	2000	35.5	32.0	7	-	-	-	-	-	-	-
	May 23	800	36.5	33.0	7	-	-	-	-	-	-	-
	May 23	2000	29.5	32.5	8	*	**	*	*	***	0.002	*
	May 24	800	31.2	34.5	7	-	-	-	-	-	-	-
MEAN			31.4	33.8	8	*	**	*	*	***	0.004	*
S.D.			4.3	1.3	1	-	-	-	-	-	0.001	-

Table 7. Chemistry results from site B (treatment area) of experiment 2 (pH depressed to 4.0).

	date	time	pH	Alk mg/L	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SIO3 mg/L	SO4 mg/L	DOC mg/L	DIC mg/L
Pretreatment	May 20/83	800	6.86	10.89	3.7	1.00	1.10	0.54	0.30	2.38	2.73	7.0	225
Treatment	May 20	2000	3.90	-6.80	4.4	1.04	1.30	0.52	0.33	2.28	20.43	7.4	202
	May 21	500	3.99	-6.00	4.5	1.04	1.25	0.48	0.35	2.34	20.11	7.3	210
	May 21	2000	3.79	-8.30	4.8	1.00	1.20	0.54	0.30	2.26	21.41	7.2	190
	May 22	800	3.98	-5.40	4.9	1.02	1.20	0.52	0.30	2.27	2.95	7.2	221
	May 22	2000	3.98	-6.30	4.5	1.00	1.20	0.50	0.30	2.28	19.66	7.4	184
	May 23	800	4.14	-3.80	4.0	1.02	1.05	0.50	0.30	2.33	17.79	7.1	199
	May 23	2000	3.98	-5.30	4.4	1.00	1.10	0.54	0.31	2.20	18.08	7.4	191
	May 24	800	3.98	-5.30	4.3	1.04	1.10	0.56	0.32	2.23	18.79	7.2	209
MEAN			3.97	-5.90	4.5	1.02	1.18	0.52	0.31	2.27	17.40	7.3	201
S.D.			0.09	1.23	0.3	0.02	0.08	0.02	0.02	0.04	5.58	0.1	12

	date	time	NH4-N ug/L	NO3-N ug/L	FF ug/L	F ug/L	Al ug/L	Al 1 ug/L	Al 2 ug/L	Fe mg/L	Mn mg/L	Zn mg/L
Pretreatment	May 20	800	0.020	0.015	42	36.6	42	1.1	4	0.515	0.036	***
Treatment	May 21	2000	0.020	0.010	38	39.9	36	1.1	15	0.640	0.070	***
	May 21	500	0.016	0.015	41	38.0	45	2.0	10	0.571	0.059	***
	May 22	2000	0.018	0.010	45	36.4	54	1.1	11	0.505	0.036	***
	May 22	800	0.016	0.015	47	38.5	44	1.0	21	0.490	0.039	***
	May 23	2000	0.014	0.015	45	38.5	43	4.0	11	0.505	0.033	***
	May 23	800	0.012	0.015	46	39.6	42	2.0	10	0.450	0.033	***
	May 24	2000	0.014	0.010	53	37.6	45	5.0	13	0.455	0.032	***
	May 24	800	0.010	0.010	48	34.4	45	8.0	13	0.465	0.035	***
MEAN			0.015	0.013	45	37.9	44	3.0	13	0.510	0.042	***
S.D.			0.003	0.002	4	1.7	5	2.3	3	0.061	0.013	0.0

	date	time	Cond23 uS/cm	Cond25 uS/cm	P ug/L	As ug/L	Cd ug/L	Co ug/L	Ni ug/L	Pb ug/L	Cu ug/L	Cr ug/L
Pretreatment	May 20	800	32.0	36.0	8	*	**	*	*	***	0.002	0.002
Treatment	May 21	2000	86.0	89.0	12	-	-	-	-	-	-	-
	May 21	500	83.0	86.0	11	-	-	-	-	-	-	-
	May 22	2000	76.0	100.0	10	*	**	*	*	***	0.002	0.001
	May 22	800	64.0	85.0	9	-	-	-	-	-	-	-
	May 23	2000	84.0	76.0	8	-	-	-	-	-	-	-
	May 23	800	76.0	69.0	8	-	-	-	-	-	-	-
	May 24	2000	66.0	76.0	9	*	**	*	*	***	0.001	*
	May 24	800	68.0	75.0	8	-	-	-	-	-	-	-
MEAN			75.4	82.0	9	*	**	*	*	***	0.002	*
S.D.			8.0	9.3	1	-	-	-	-	-	0.001	-

Table 8. Chemistry results from site C (treatment area) of experiment 2 (pH depressed to 4.0).

	date	time	pH	Alk ug/L	Ca ug/L	Mg ug/L	Na ug/L	K ug/L	Cl ug/L	SIO3 ug/L	SO4 ug/L	DOC ug/L	DIC ug/L
Pretreatment	May 20/83	800	6.89	10.92	3.5	0.92	1.05	0.54	0.30	2.37	2.73	7.0	243
Treatment	May 20	2000	4.42	-2.00	3.8	0.94	1.20	0.54	0.32	2.25	15.54	7.3	207
	May 21	800	3.99	-6.00	3.9	0.96	1.25	0.50	0.35	2.34	20.07	7.3	217
	May 21	2000	3.80	-8.10	4.0	0.92	1.15	0.52	0.29	2.25	20.81	7.2	190
	May 22	800	3.98	-5.50	4.1	0.96	1.25	0.52	0.31	2.29	19.29	7.2	199
	May 22	2000	3.97	-5.80	3.7	0.90	1.20	0.52	0.30	2.28	19.22	7.3	179
	May 23	800	4.12	-3.90	3.5	0.96	1.10	0.48	0.32	2.31	17.37	7.1	198
	May 23	2000	4.00	-4.90	3.5	0.90	1.10	0.58	0.30	2.21	18.08	7.4	178
	May 24	800	3.99	-5.00	3.8	0.94	1.15	0.58	0.32	2.23	18.82	7.2	202
MEAN			4.03	-5.15	3.8	0.94	1.18	0.53	0.31	2.27	18.65	7.3	196
S.D.			0.17	1.64	0.2	0.02	0.06	0.03	0.02	0.04	1.54	0.1	13

	date	time	NH4-N ug/L	NO3-N ug/L	FF ug/L	F ug/L	Al ug/L	Al 1 ug/L	Al 2 ug/L	Fe mg/L	Mn mg/L	Zn mg/L
Pretreatment	May 20	800	0.018	0.015	42	36.8	46	1.1	5	0.515	0.035	***
Treatment	May 21	2000	0.016	0.015	41	38.3	61	4.0	18	-	-	***
	May 21	800	0.016	0.015	43	38.0	46	4.0	11	0.515	0.045	***
	May 22	2000	0.016	0.010	42	37.5	45	2.0	13	0.515	0.045	***
	May 22	800	0.016	0.010	45	37.3	45	1.0	15	0.490	0.043	***
	May 23	2000	0.014	0.015	45	39.0	48	4.0	15	0.520	0.040	***
	May 23	800	0.014	0.015	46	39.5	45	3.0	11	0.475	0.039	***
	May 24	2000	0.016	0.010	57	37.5	45	4.0	14	0.475	0.040	***
	May 24	800	0.012	0.010	49	34.0	51	6.0	16	0.450	0.039	***
MEAN			0.015	0.013	46	37.6	48	3.5	14	0.491	0.042	***
S.D.			0.001	0.003	5	1.6	5	1.4	2	0.024	0.002	0.0

	date	time	Cond23 uS/cm	Cond25 uS/cm	P ug/L	As ug/L	Cd ug/L	Co ug/L	Ni ug/L	Pb ug/L	Cu ug/L	Cr ug/L
Pretreatment	May 20	800	32.0	36.0	8	*	**	*	*	***	*	0.001
Treatment	May 21	2000	56.0	58.0	28	-	-	-	-	-	-	-
	May 21	800	83.0	86.0	8	-	-	-	-	-	-	-
	May 22	2000	76.0	100.0	10	*	**	*	*	***	0.002	*
	May 22	800	64.0	85.0	10	-	-	-	-	-	-	-
	May 23	2000	87.0	79.0	9	-	-	-	-	-	-	-
	May 23	800	75.0	68.0	8	-	-	-	-	-	-	-
	May 24	2000	68.5	76.0	10	*	0.0003	0.001	*	0.004	0.003	0.001
	May 24	800	71.0	78.5	8	-	-	-	-	-	-	-
MEAN			72.6	78.8	11	*	**	*	*	***	0.003	*
S.D.			9.4	11.7	6	-	-	-	-	-	0.001	-

Table 9. Chemistry results from site D (treatment area) of experiment 2 (pH depressed to 4.0).

	date	time	pH	Alk ug/L	Ca ug/L	Mg ug/L	Na ug/L	K ug/L	Cl ug/L	SIO3 ug/L	SO4 ug/L	DOC ug/L	DIC ug/L
Pretreatment	May 15/83	1500	6.92	10.67	3.8	0.88	1.30	0.56	0.26	2.33	3.22	7.1	211
	May 20	800	6.85	10.85	2.9	0.92	0.95	0.52	0.31	2.37	2.78	7.0	241
Treatment	May 20	2000	4.04	-5.10	4.3	0.96	1.25	0.58	0.34	2.26	19.17	7.3	168
	May 21	800	4.02	-5.60	4.0	0.96	1.20	0.54	0.35	2.35	19.82	7.2	184
	May 21	2000	3.84	-7.60	4.2	0.94	1.25	0.52	0.31	2.25	20.78	7.2	173
	May 22	800	4.01	-5.00	3.9	0.94	1.20	0.50	0.30	2.30	19.25	7.1	176
	May 22	2000	4.06	-5.00	3.7	0.92	1.20	0.52	0.30	2.28	18.47	7.3	158
	May 23	800	4.13	-3.80	3.9	0.92	1.05	0.52	0.31	2.32	17.35	7.2	168
	May 23	2000	4.00	-4.90	3.5	0.92	1.15	0.58	0.35	2.21	18.21	7.3	156
	May 24	800	4.03	-4.90	4.0	0.96	1.15	0.56	0.32	2.23	18.59	7.2	180
MEAN			4.02	-5.24	3.9	0.94	1.18	0.54	0.32	2.28	18.96	7.2	170
S.D.			0.08	1.01	0.2	0.02	0.06	0.03	0.02	0.04	0.98	0.1	9

	date	time	NH4-N ug/L	NO3-N ug/L	FF ug/L	F ug/L	Al ug/L	Al 1 ug/L	Al 2 ug/L	Fe mg/L	Mn mg/L	Zn mg/L
Pretreatment	May 15	1500	0.022	0.030	41	39.0	46	1.1	6	0.540	0.041	***
	May 20	800	0.016	0.010	42	38.5	44	1.1	4	0.565	0.034	***
Treatment	May 20	2000	0.020	0.010	39	38.1	63	2.0	15	0.525	0.067	***
	May 21	800	0.016	0.015	39	38.0	51	-	11	0.555	0.069	***
	May 21	2000	0.018	0.015	40	37.8	52	4.0	16	0.515	0.064	***
	May 22	800	0.018	0.015	42	36.4	47	1.0	15	0.500	0.058	***
	May 22	2000	0.018	0.010	43	37.6	48	5.0	16	0.480	0.055	***
	May 23	800	0.014	0.015	44	39.2	46	2.0	28	0.450	0.047	***
	May 23	2000	0.018	0.010	57	39.0	51	4.0	17	0.470	0.059	***
	May 24	800	0.014	0.010	48	35.2	48	5.0	14	0.445	0.051	***
MEAN			0.017	0.013	43.9	37.7	51	3.3	17	0.492	0.059	***
S.D.			0.002	0.002	5.7	1.2	5	1.5	5	0.036	0.007	0.0

	date	time	Cond23 uS/cm	Cond25 uS/cm	P ug/L	As ug/L	Cd ug/L	Co ug/L	Ni ug/L	Pb ug/L	Cu ug/L	Cr ug/L
Pretreatment	May 15	1500	33.0	34.5	10	-	-	-	-	-	-	-
	May 20	800	31.5	36.0	9	-	-	-	-	-	-	-
Treatment	May 20	2000	79.0	82.0	10	-	-	-	-	-	-	-
	May 21	800	82.0	85.0	9	-	-	-	-	-	-	-
	May 21	2000	76.0	100.0	11	*	**	*	*	***	*	*
	May 22	800	63.0	84.0	11	-	-	-	-	-	-	-
	May 22	2000	80.0	72.0	10	-	-	-	-	-	-	-
	May 23	800	75.0	68.0	8	-	-	-	-	-	-	-
	May 23	2000	68.5	76.0	10	*	**	*	*	***	0.002	*
	May 24	800	69.0	76.0	9	-	-	-	-	-	-	-
MEAN			74.1	80.4	9.8	*	**	*	*	***	*	*
S.D.			6.2	9.2	1.0	-	-	-	-	-	-	-

Table 10. Chemistry results from site A (reference area) of experiment 3 (pH depressed to 5.0).

	date	time	pH	Alk mg/L	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SIO3 mg/L	SO4 mg/L	DOC mg/L	DIC mg/L
Pretreatment	May 15/83	1500	6.96	10.69	3.1	0.74	1.20	0.54	0.31	2.27	3.07	7.1	200
	May 24	800	6.81	10.78	3.3	0.82	1.15	0.56	0.31	2.20	2.81	7.2	231
Reference	May 24	2000	6.87	10.18	3.3	0.86	1.15	0.54	0.30	2.24	2.85	7.3	202
	May 25	800	6.85	10.90	3.3	0.88	1.10	0.54	0.30	2.30	2.80	7.2	224
	May 25	2000	6.91	10.24	3.4	0.80	1.20	0.54	0.33	2.00	2.89	7.2	195
	May 26	800	6.84	10.65	3.8	0.80	1.15	0.52	0.30	2.07	2.89	7.0	214
	May 26	2000	6.84	9.84	3.3	0.76	1.35	0.52	0.30	1.84	2.89	7.2	226
	May 27	800	6.78	11.00	4.0	0.82	1.30	0.52	0.30	1.89	2.77	6.9	257
	May 27	2000	6.82	10.05	3.8	0.82	1.15	0.56	0.35	1.85	2.90	7.3	236
	May 28	800	6.70	10.97	4.0	0.86	1.10	0.54	0.32	1.91	2.92	7.2	277
MEAN			6.83	10.48	3.6	0.83	1.19	0.53	0.31	2.01	2.86	7.2	229
S.D.			0.06	0.43	0.3	0.04	0.09	0.01	0.02	0.17	0.05	0.1	26

	date	time	NH4-N ug/L	NO3-N ug/L	FF ug/L	F ug/L	Al ug/L	Al 1 ug/L	Al 2 ug/L	Fe mg/L	Mn mg/L	Zn mg/L
Pretreatment	May 15	1500	0.014	0.025	39	37.8	46	1.1	-	0.515	0.045	***
	May 24	800	0.012	0.010	50	36.2	35	1.1	2	0.465	0.035	***
Reference	May 24	2000	0.024	0.010	62	37.2	48	1.1	3	0.450	0.028	***
	May 25	800	0.012	0.010	52	39.2	58	1.1	2	0.445	0.030	***
	May 25	2000	0.016	0.010	50	-	33	1.0	3	0.325	0.019	***
	May 26	800	0.014	0.010	50	-	29	1.1	3	0.225	0.007	***
	May 26	2000	0.014	0.005	58	-	38	1.1	4	0.320	0.009	***
	May 27	800	0.010	0.005	54	-	30	1.1	6	0.385	0.016	***
	May 27	2000	0.016	0.010	-	-	38	1.1	5	0.260	0.019	***
	May 28	800	0.010	0.010	-	-	40	1.1	7	0.405	0.041	***
MEAN			0.015	0.009	54.3	38.2	39	1.1	4	0.352	0.021	***
S.D.			0.004	0.002	4.4	1.0	9	0.0	2	0.078	0.011	0.0

	date	time	Cond23 uS/cm	Cond25 uS/cm	P ug/L	As ng/L	Cd ng/L	Co ng/L	Ni ng/L	Pb ng/L	Cu ng/L	Cr ng/L
Pretreatment	May 15	1500	32.5	34.0	12	-	-	-	-	-	-	-
	May 24	800	31.5	35.0	7	-	-	-	-	-	-	-
Reference	May 24	2000	35.5	37.0	8	-	-	-	-	-	-	-
	May 25	800	33.0	34.5	7	-	-	-	-	-	-	-
	May 25	2000	33.5	34.5	8	*	**	*	*	***	*	*
	May 26	800	35.5	36.5	8	-	-	-	-	-	-	-
	May 26	2000	34.0	34.5	9	-	-	-	-	-	-	-
	May 27	800	35.0	35.5	7	-	-	-	-	-	-	-
	May 27	2000	30.0	34.5	8	*	**	*	*	***	0.001	*
	May 28	800	31.5	36.5	8	-	-	-	-	-	-	-
MEAN			33.5	35.4	8	*	**	*	*	***	*	*
S.D.			1.8	1.0	1	-	-	-	-	-	-	-

Table 11. Chemistry results from site B (treatment area) of experiment 3 (pH depressed to 5.0).

	date	time	pH	Alk mg/L	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SIO3 mg/L	SO4 mg/L	DOC mg/L	DIC mg/L
Pretreatment	May 24/83	800	6.81	10.71	3.4	0.92	1.25	0.52	0.30	2.20	2.82	7.1	225
Treatment	May 24	2000	5.02	-0.05	4.5	0.94	1.10	0.54	5.90	2.24	5.49	7.4	186
	May 25	800	5.30	0.85	4.0	1.00	1.10	0.52	5.65	2.31	5.39	7.2	205
	May 25	2000	5.06	0.29	4.2	0.84	1.10	0.54	5.20	2.00	6.09	7.2	182
	May 26	800	4.97	-0.09	4.5	0.90	1.20	0.54	5.78	1.07	6.40	7.1	194
	May 26	2000	4.89	-0.39	4.3	0.82	1.30	0.54	5.35	1.86	5.88	7.2	108
	May 27	800	4.96	-0.12	4.6	0.88	1.35	0.54	5.92	2.00	6.00	6.9	234
	May 27	2000	4.88	-0.40	4.5	0.92	1.20	0.56	5.60	1.85	6.16	7.3	207
	May 28	800	4.84	-0.54	4.3	0.90	1.10	0.56	6.25	1.91	6.63	7.2	223
MEAN			4.99	-0.06	4.4	0.90	1.18	0.54	5.71	1.91	6.01	7.2	192
S.D.			0.14	0.42	0.2	0.05	0.09	0.01	0.31	0.35	0.39	0.1	36

	date	time	NH4-N ug/L	NO3-N ug/L	FF ug/L	F ug/L	Al ug/L	Al 1 ug/L	Al 2 ug/L	Fe mg/L	Mn mg/L	Zn mg/L
Pretreatment	May 24	800	0.008	0.010	50	35.8	36	1.1	2	0.465	0.033	***
Treatment	May 24	2000	0.024	0.010	62	40.8	42	1.1	7	0.460	0.033	***
	May 25	800	0.012	0.010	58	39.0	43	1.1	8	0.480	0.038	***
	May 25	2000	0.016	0.010	56	-	39	1.1	9	0.315	0.021	***
	May 26	800	0.008	0.010	56	-	38	1.1	10	0.315	0.037	***
	May 26	2000	0.008	0.005	59	-	46	2.0	11	0.370	0.033	***
	May 27	800	0.006	0.005	61	-	39	1.0	10	0.435	0.043	***
	May 27	2000	0.010	0.010	-	-	44	1.1	12	0.430	0.046	***
	May 28	800	0.008	0.010	-	-	47	4.0	13	0.380	0.053	***
MEAN			0.012	0.009	59	39.9	42	1.6	10	0.398	0.038	***
S.D.			0.006	0.002	2	0.9	3	1.0	2	0.059	0.009	0.0

	date	time	Cond23 uS/cm	Cond25 uS/cm	P ug/L	As ug/L	Cd ug/L	Co ug/L	Ni ug/L	Pb ug/L	Cu ug/L	Cr ug/L
Pretreatment	May 24	800	33.0	36.5	7	-	-	-	-	-	-	-
Treatment	May 24	2000	44.5	46.0	9	-	-	-	-	-	-	-
	May 25	800	43.5	45.0	7	-	-	-	-	-	-	-
	May 25	2000	42.0	43.0	9	*	**	*	0.001	***	0.001	*
	May 26	800	46.5	48.0	7	-	-	-	-	-	-	-
	May 26	2000	44.0	45.0	10	-	-	-	-	-	-	-
	May 27	800	47.0	48.0	8	-	-	-	-	-	-	-
	May 27	2000	38.0	44.0	9	*	**	*	*	***	*	*
	May 28	800	39.5	45.5	8	-	-	-	-	-	-	-
MEAN			43.1	45.6	8	*	**	*	*	***	*	*
S.D.			3.0	1.6	1	-	-	-	-	-	-	-

Table 12. Chemistry results from site C (treatment area) of experiment 3 (pH depressed to 5.0).

	date	time	pH	Alk mg/L	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SIO3 mg/L	SO4 mg/L	DOC mg/L	DIC mg/L
Pretreatment	May 24/83	800	6.86	10.43	3.5	0.94	1.15	0.52	0.30	2.20	2.79	7.1	226
Treatment	May 24	2000	5.48	1.11	4.6	0.92	1.25	0.60	5.90	2.27	5.51	7.3	181
	May 25	800	5.33	0.89	4.0	0.98	1.15	0.54	5.55	2.31	5.39	7.1	189
	May 25	2000	5.10	0.28	4.3	0.82	1.10	0.56	5.30	2.00	6.02	7.1	168
	May 26	800	5.03	0.03	4.4	0.86	1.10	0.52	5.64	2.08	6.42	7.1	191
	May 26	2000	4.99	-0.17	4.1	0.84	1.25	0.56	5.35	1.86	5.79	7.2	209
	May 27	800	4.96	-0.20	4.6	0.88	1.40	0.52	5.95	2.00	6.05	6.9	229
	May 27	2000	4.97	-0.22	4.4	0.88	1.15	0.56	5.56	1.86	6.02	7.3	194
	May 28	800	4.83	-0.52	4.5	0.90	1.25	0.54	6.18	1.91	6.42	7.2	230
MEAN			5.09	0.15	4.4	0.89	1.21	0.55	5.68	2.04	5.95	7.2	199
S.D.			0.20	0.54	0.2	0.05	0.09	0.02	0.29	0.16	0.35	0.1	21

	date	time	NH4-N ug/L	NO3-N ug/L	FF ug/L	F ug/L	Al ug/L	Al 1 ug/L	Al 2 ug/L	Fe mg/L	Mn mg/L	Zn mg/L
Pretreatment	May 24	800	0.010	0.010	50	38.7	37	1.1	3	0.465	0.033	***
Treatment	May 24	2000	0.020	0.020	60	38.6	44	1.1	7	0.500	0.043	***
	May 25	800	0.012	0.012	58	36.8	45	1.1	7	0.450	0.036	***
	May 25	2000	0.018	0.018	58	-	43	1.1	10	0.325	0.041	***
	May 26	800	0.008	0.008	56	-	41	1.1	9	0.290	0.023	***
	May 26	2000	0.012	0.012	60	-	55	1.0	12	0.375	0.038	***
	May 27	800	0.010	0.010	58	-	42	1.0	9	0.365	0.039	***
	May 27	2000	0.008	0.008	-	-	45	1.1	14	0.325	0.042	***
	May 28	800	0.006	0.006	-	-	50	2.0	17	0.370	0.052	***
MEAN			0.012	0.012	58	37.7	46	1.2	11	0.375	0.039	***
S.D.			0.005	0.005	1	0.9	4	0.3	3	0.065	0.008	0.0

	date	time	Cond23 uS/cm	Cond25 uS/cm	P ug/L	As ug/L	Cd ug/L	Co ug/L	Ni ug/L	Pb ug/L	Cu ug/L	Cr ug/L
Pretreatment	May 24	800	33.0	36.5	7	-	-	-	-	-	-	-
Treatment	May 24	2000	44.0	46.0	9	-	-	-	-	-	-	-
	May 25	800	43.5	45.0	8	-	-	-	-	-	-	-
	May 25	2000	44.5	46.0	10	*	**	*	*	***	*	*
	May 26	800	46.0	47.0	8	-	-	-	-	-	-	-
	May 26	2000	44.5	45.5	11	-	-	-	-	-	-	-
	May 27	800	47.0	48.0	8	-	-	-	-	-	-	-
	May 27	2000	38.5	44.5	9	*	**	*	*	***	*	*
	May 28	800	42.5	49.0	9	-	-	-	-	-	-	-
MEAN			43.8	46.4	9	*	**	*	*	***	*	*
S.D.			2.4	1.4	1	-	-	-	-	-	-	-

Table 13. Chemistry results from site D (treatment area) of experiment 3 (pH depressed to 5.0).

	date	time	pH	Alk ug/L	Ca ug/L	Mg ug/L	Na ug/L	K ug/L	Cl ug/L	SiO3 ug/L	SO4 ug/L	DOC ug/L	DIC ug/L
Pretreatment	May 15/83	1500	6.93	10.71	3.9	0.86	1.30	0.54	0.30	2.31	3.12	7.2	225
	May 24	800	6.80	10.97	3.3	0.86	1.15	0.56	0.32	2.22	2.90	7.2	227
Treatment	May 24	2000	5.54	0.98	3.4	0.92	1.20	0.56	4.45	2.27	5.32	7.3	137
	May 25	800	5.76	2.36	3.3	0.92	1.15	0.50	4.93	2.22	5.14	7.2	158
	May 25	2000	5.28	0.59	4.1	0.82	1.15	0.54	5.20	2.02	6.07	7.2	131
	May 26	800	5.73	2.02	4.2	0.86	1.10	0.52	4.85	2.10	5.73	7.1	153
	May 26	2000	5.13	-0.07	4.2	0.82	1.35	0.52	5.35	1.89	5.88	7.1	153
	May 27	800	5.23	0.45	4.6	0.86	1.20	0.54	5.85	2.04	6.07	6.8	171
	May 27	2000	5.26	0.39	4.3	0.86	1.20	0.56	5.33	1.89	5.81	7.2	148
	May 28	800	5.21	0.38	4.5	0.92	1.20	0.56	6.00	1.95	6.55	7.1	163
	May 28	800	5.22	0.47	4.5	0.92	1.15	0.52	6.02	1.95	6.56	7.2	171
	May 28	800	5.20	0.33	4.5	0.92	1.15	0.52	6.02	1.95	6.41	7.3	179
MEAN			5.36	0.79	4.2	0.88	1.19	0.53	5.40	2.03	5.95	7.2	156
S.D.			0.22	0.75	0.4	0.04	0.06	0.02	0.53	0.13	0.46	0.1	14

	date	time	NH4-N ug/L	NO3-N ug/L	FF ug/L	F ug/L	Al ug/L	Al 1 ug/L	Al 2 ug/L	Fe mg/L	Mn mg/L	Zn mg/L
Pretreatment	May 15	1500	0.014	0.025	40.0	38.6	41	-	11	0.520	0.039	***
	May 24	800	0.010	0.010	52.0	37.5	38	1.1	3	0.455	0.032	***
Treatment	May 24	2000	0.020	0.010	60	39.5	51	1.1	8	0.495	0.048	***
	May 25	800	0.012	0.010	58	37.6	44	1.1	8	0.440	0.036	***
	May 25	2000	0.022	0.010	57	-	45	1.1	10	0.250	0.019	***
	May 26	800	0.010	0.010	58	-	42	1.1	7	0.415	0.039	***
	May 26	2000	0.012	0.005	59	-	47	1.0	16	0.400	0.056	***
	May 27	800	0.016	0.010	57	-	45	1.1	11	0.445	0.059	***
	May 27	2000	0.008	0.010	-	-	46	1.1	14	0.285	0.025	***
	May 28	800	0.008	0.015	-	-	50	1.1	14	0.515	0.064	***
	May 28	800	0.008	0.015	-	-	51	6.0	22	0.405	0.050	***
	May 28	800	0.014	0.015	-	-	48	2.0	13	0.440	0.056	***
MEAN			0.013	0.011	58	38.6	47	1.7	12	0.409	0.045	***
S.D.			0.005	0.003	1	0.9	3	1.5	4	0.079	0.014	0.0

	date	time	Cond23 uS/cm	Cond25 uS/cm	P ug/L	As ug/L	Cd ug/L	Co ug/L	Ni ug/L	Pb ug/L	Cu ug/L	Cr ug/L
Pretreatment	May 15	1500	32.5	34.0	8	-	-	-	-	-	-	-
	May 24	800	31.2	34.5	7	-	-	-	-	-	-	-
Treatment	May 24	2000	42.0	43.5	12	-	-	-	-	-	-	-
	May 25	800	42.5	44.0	7	-	-	-	-	-	-	-
	May 25	2000	43.5	45.0	10	*	**	*	*	***	*	*
	May 26	800	43.0	44.0	7	-	-	-	-	-	-	-
	May 26	2000	44.5	45.5	9	-	-	-	-	-	-	-
	May 27	800	46.5	47.5	7	-	-	-	-	-	-	-
	May 27	2000	37.5	43.5	9	*	**	*	*	***	*	*
	May 28	800	41.0	47.5	8	-	-	-	-	-	-	-
	May 28	800	41.0	47.5	9	-	-	-	-	-	-	-
	May 28	800	41.0	47.5	9	-	-	-	-	-	-	-
MEAN			42.3	45.6	9	*	**	*	*	***	*	*
S.D.			2.3	1.7	1	-	-	-	-	-	-	-

Table 14. Summary of life stages, Functional and Behavioural Groups of organisms collected.

LIFE STAGES

L=Larvae P=Pupae N=Nymph A=Adult

BEHAVIOURAL GROUPS

Bu=Burrower Cl=Clinger Cm=Climber
Sk=Skater Sp=Sprawler Sw=Swimmer
Non aq=non aquatic

FUNCTIONAL GROUPS

C/F=Collector, Filterer C/G=Collector, Gatherer En=Engulfer
Sc=Scraper Sh/D=Shredder, Detritivore Para=Parasitic
Non aq=Non aquatic

FUNCTIONAL AND BEHAVIOURAL GROUPS OF ORGANISMS COLLECTED

TAXA	BEHAVIOURAL GROUP	FUNCTIONAL GROUP
EPHEMEROPTERA		
Siphlonuridae		
Ameletus	Sw	C/G
Ephemerellidae		
Ephemerella	Sw	C/G
Heptageniidae		
Stenonema	Cl	C/G
Leptophlebiidae		
Leptophlebia	Sw	C/G
Baetidae		
Baetis	Sw	C/G
Ephemeridae		
Hexagenia	Bu	C/G
PLECOPTERA		
Leuctridae		
Leuctra	Cl	Sh/D
Nemouridae		
Nemoura	Cl	Sh/D
Capnidae		
Allocapnia	Cl	Sh/D
Chloroperlidae	Cl	En

TAXA	BEHAVIOURAL GROUP	FUNCTIONAL GROUP
DIPTERA		
Chironomidae		
Pentaneurini	Sp	En
Paramerina	Sp	En
Thienemannimyia	Sp	En
Ablabesmyia	Sp	En
Macropelopiini	Sp	En
Procladius	Sp	En
Natarsia	Sp	En
Chironomini	Bu	C/G
Polypedilum	Cl	Sh/D
Chironomus	Bu	C/G
Paracladopelma	Sp	C/G
Pseudochironomus	Bu	C/G
Microtendipes	Cl	C/G
Tanytarsini	Cl	C/F
Tanytarsus	Bu	C/G
Rheotanytarsus	Cl	C/F
Micropsecta	Cm	C/G
Corynoneurini	Sp	C/G
Thienemanniella	Sp	C/G
Corynoneura	Sp	C/G

Table 14 cont'd

TAXA	BEHAVIOURAL GROUP	FUNCTIONAL GROUP
DIPTERA cont'd		
Chironomidae		
Orthocladiini	Sp	C/G
Cricotopus	Cl	Sh/D
Synorthocladius	Sp	C/G
Pseudocricotopus	Sp	C/G
Eukiefferiella	Sp	C/G
Parametriocnemus	Sp	C/G
Psectrocladius	Sp	C/G
Pseudosmittia	Sp	C/G
Rheocricotopus	Cl	C/F
Simuliidae		
Simulium	Cl	C/F
Prosimulium	Cl	C/F
Ectemnia	Cl	C/F
Athericidae		
Atherix	Sp	En
Ceratopogonidae	Sp	En
Culicoides	Bu	En
Empididae	Sp	En
Stratiomyidae	Sw	C/G
Syrphidae	Bu	C/G
Tipulidae	Bu	C/G
Limonia	Bu	Sh/D
Muscidae	Sp	En
Tabanidae	Sp	En
Mycetophilidae	Non aq	Non aq
Chaoboridae		
Chaoborus	Sp	En
Dixidae		
Dixa	Sw	C/G
Ptychopteridae		
Bittacomorpha	Bu	C/G
Tachinidae	Non aq	Non aq
TRICHOPTERA		
Philopotamidae	Cl	C/F
Chimarra	Cl	C/F
Psychomyiidae	Cl	C/G
Psychomyia	Cl	C/G
Polycentropidae	Cl	En
Polycentropus	Cl	En
Hydropsychidae	Cl	C/F
Hydropsyche	Cl	C/F
Macronema	Cl	C/F
Glossomatidae	Cl	Sc
Glossosoma	Cl	Sc
Brachycentridae	Cl	C/F
Brachycentrus	Cl	C/F

TAXA	BEHAVIOURAL GROUP	FUNCTIONAL GROUP
TRICHOPTERA cont'd		
Lepidostomatidae	Sp	Sh/D
Lepidostoma	Sp	Sh/D
Limnephilidae		
Neophylax	Cl	Sc
Platycentropus	Cm	Sh/D
Hydatophylax	Sp	Sh/D
Pycnopsyche	Cl	Sh/D
Pseutotenophylax	Sp	Sh/D
Hydroptilidae	Cl	Sc
Oxyethira	Cm	Sc
Phyrganeidae	Cm	Sh/D
Ptilostomis	Cm	Sh/D
Molannidae		
Molanna	Sp	Sc
Leptoceridae		
Nectopsyche	Cm	Sh/D
Oecetis	Sp	Sh/D
COLEOPTERA		
Carabidae	Sw	Sh/D
Haliplidae		
Haliplus	Sw	Sh/D
Dytiscidae		
Dyticus	Sw	En
Agabus	Sw	En
Hydaticus	Sw	En
Agabetes	Sw	En
Coymbetes	Sw	En
Rhantus	Sw	En
Hydroporus	Sw	En
Hydroscaphidae		
Hydroscapha	Cl	Sc
Sperchopsis	Cl	Sc
Staphylinidae	Non aq	Non aq
Psephenidae		
Psephenus	Cl	Sc
Dryopidae	Cl	Sc
Elmidae		
Stenelmis	Cl	Sc
Lampyridae	Non aq	Non aq
Gyrinidae		
Gyrinus	Sw	En
Ptilodactylidae		
Anchytarsus	Cl	Sc
Scarabeidae		
Cotinis	Non aq	Non aq

Table 14 cont'd

TAXA	BEHAVIOURAL GROUP	FUNCTIONAL GROUP
HEMIPTERA		
Corixidae		
Siegara	Sw	En
Gerridae		
Rheumatobates	Sk	En
Notonectidae		
Notonecta	Sw	En
Nepidae		
Ranatra	Cm	En
Vellidae		
Rhagovelia	Sk	En
Cercopidae	Non aq	Non aq
Pentatomidae	Non aq	Non aq
LEPIDOPTERA		
Pyralidae		
Acentropus	Sw	Sh/D
HYMENOPTERA		
Ichneumonidae	Non aq	Non aq
Chalcidoidea	Non aq	Non aq
Formicidae	Non aq	Non aq
	Non aq	Non aq
PSOCOPTERA		
Trogiidae	Non aq	Non aq
ODONATA		
Libellulidae		
Libellula	Sp	En
Orthemis	Sp	En
Macrothemis	Sp	En
Cordulogastridae		
Cordulegastor	Sp	En
Aeshnidae		
Aeshna	Cl	En
Boyeria	Cl	En
Anax	Cm	En

TAXA	BEHAVIOURAL GROUP	FUNCTIONAL GROUP
ODONATA cont'd		
Cordullidae		
Dorocordulia	Sp	En
Zygoptera	Cl	En
Protoneuridae		
Ischnura	Cm	En
Macromiidae		
Macromia	Sp	En
Gomphidae		
Omphiogomphus	Bu	En
MISCELLANEOUS		
Nematoda	Cl	C/G
Oligochaeta	Bu	C/G
Cyclopoida	Sw	C/G
Harpacticoida	Sw	C/G
Ostracoda	Sw	C/G
Araneidae	Non aq	Non aq
Acarina	Sw	C/G
Collembola	Sp	C/G
Lepomis	Sw	En
Chrosomus	Sw	En
Perca	Sw	En
Rana		C/F
Sphaerium	Cl	C/F
Planorbis	Cl	C/F
Gordiidae	Cl	C/G
Hirudinea	Sw	En
Cladocera	Sw	C/G
Hyallella	Sw	C/G
Thysanoptera	Non aq	Non aq
Aphidae	Non aq	Non aq
Physa	Cl	Sc
Orconectes	Sw	C/G
Ferrisia	Cl	Sc
Ancyclus	Cl	Sc
Gryllidae	Non aq	Non aq

Table 15. Summary of pretreatment benthic samples by taxonomic order from the combined treatment and reference areas of experiment 1.

SUMMARY OF BENTHIC ORGANISMS BY TAXONOMIC ORDER
(numbers per square metre)
PRETREATMENT SAMPLES
EXPERIMENT 1

TAXONOMIC ORDER	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12
EPHEMEROPTERA	254	318	0	1081	127	32	0	0	0	0	0	32
PLECOPTERA	159	0	1495	0	0	0	0	0	0	0	0	0
DIPTERA	95782	3562	10717	18985	4643	8872	827	4865	4611	11766	254	1113
TRICHOPTERA	413	350	32	700	95	700	64	191	604	32	254	0
COLEOPTERA	95	0	32	32	32	0	0	0	0	0	254	0
ODONATA	0	0	0	32	0	0	0	0	0	0	0	0
MISCELLANEOUS	11416	1781	13356	19970	1081	159	1558	2735	1526	541	1781	1526

TAXONOMIC ORDER	CORE 13	CORE 14	CORE 15	CORE 16	CORE 17	CORE 18	MEAN CORES 1-18	S.D. CORES 1-18
EPHEMEROPTERA	0	0	0	95	1018	0	164	326
PLECOPTERA	0	0	0	0	286	0	108	344
DIPTERA	763	318	11225	7091	8936	19875	11900	21148
TRICHOPTERA	254	0	1018	223	572	0	306	293
COLEOPTERA	0	0	0	477	32	2067	168	476
ODONATA	0	0	0	0	0	0	2	7
MISCELLANEOUS	5088	159	15264	2735	5788	15773	5680	6227

Table 16. Summary of post-treatment benthic samples by taxonomic order from the reference area of experiment 1.

SUMMARY OF BENTHIC ORGANISMS BY TAXONOMIC ORDER
(numbers per square metre)
POST-TREATMENT SAMPLES - REFERENCE AREA
EXPERIMENT 1

TAXONOMIC ORDER	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12
EPHEMEROPTERA	254	318	0	1081	127	32	0	0	0	0	0	0
PLECOPTERA	159	0	1495	0	0	0	0	0	0	0	0	0
DIPTERA	95782	3562	10717	18985	4643	8872	827	4865	3116	2035	5629	1526
TRICHOPTERA	413	350	32	700	95	700	64	191	32	0	0	0
COLEOPTERA	95	0	32	32	32	0	0	0	509	0	0	0
ODONATA	0	0	0	32	0	0	0	0	0	0	0	0
MISCELLANEOUS	11416	1781	13356	19970	1081	159	1558	2735	3053	1018	2608	3593

TAXONOMIC ORDER	CORE 13	CORE 14	CORE 15	CORE 16	CORE 17	CORE 18	MEAN CORES 1-18	S.D. CORES 1-18
EPHEMEROPTERA	509	0	32	509	0	0	159	280
PLECOPTERA	509	0	0	0	0	1018	177	408
DIPTERA	8681	4102	10208	11702	3180	7123	11420	20925
TRICHOPTERA	1558	0	0	32	95	0	237	391
COLEOPTERA	763	0	0	0	0	0	81	202
ODONATA	0	0	0	0	0	0	2	7
MISCELLANEOUS	9445	4102	5597	6614	2067	3053	5178	5077

Table 17. Summary of post-treatment benthic samples by taxonomic order from the treatment area of experiment 1.

SUMMARY OF BENTHIC ORGANISMS BY TAXONOMIC ORDER
(numbers per square metre)
POST-TREATMENT SAMPLES - TREATMENT AREA
EXPERIMENT 1

TAXONOMIC ORDER	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12
EPHEMEROPTERA	0	0	0	0	0	0	0	0	0	0	0	0
PLECOPTERA	0	0	0	0	0	0	0	0	0	127	127	0
DIPTERA	5183	6137	6265	4070	19430	2035	2035	2035	4102	6901	3212	3593
TRICHOPTERA	0	0	0	64	0	95	0	0	32	318	0	32
COLEOPTERA	0	0	0	0	0	0	0	0	0	254	0	0
ODONATA	0	0	0	0	0	0	0	0	0	0	0	0
MISCELLANEOUS	3053	30560	4166	4102	6137	32	6137	3593	95	2067	763	2544

TAXONOMIC ORDER	CORE 13	CORE 14	CORE 15	CORE 16	CORE 17	CORE 18	CORE 19	CORE 20	MEAN CORES 1-20	S.D. CORES 1-20
EPHEMEROPTERA	0	0	0	0	0	0	0	0	0	0
PLECOPTERA	0	0	0	0	0	0	0	0	13	38
DIPTERA	5152	5629	9667	3053	7123	1081	8141	18412	6163	4778
TRICHOPTERA	0	541	32	0	0	254	32	445	92	159
COLEOPTERA	0	0	1018	509	0	254	0	0	102	247
ODONATA	0	0	0	0	0	0	0	0	0	0
MISCELLANEOUS	2099	2576	10208	2067	7123	3593	2067	4134	4856	6364

Table 18. Summary of pretreatment benthic samples by taxonomic order from the combined reference and treatment areas of experiment 2.

SUMMARY OF BENTHIC ORGANISMS BY TAXONOMIC ORDER
(numbers per square metre)
PRETREATMENT SAMPLES
EXPERIMENT 2

TAXONOMIC ORDER	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12
EPHEMEROPTERA	0	0	0	0	509	0	32	509	0	0	0	0
PLECOPTERA	0	0	0	0	509	0	0	0	0	1018	0	0
DIPTERA	3116	2035	5629	1526	8681	4102	10208	11702	3180	7123	6137	1018
TRICHOPTERA	32	0	0	0	1558	0	0	32	95	0	0	0
COLEOPTERA	509	0	0	0	763	0	0	0	0	0	0	0
ODONATA	0	0	0	0	0	0	0	0	0	0	0	0
MISCELLANEOUS	3053	1018	2608	3593	9445	4102	5597	6614	2067	3053	9158	3053

TAXONOMIC ORDER	CORE 13	CORE 14	CORE 15	CORE 16	CORE 17	CORE 18	CORE 19	CORE 20	MEAN CORES 1-20	S.D. CORES 1-20
EPHEMEROPTERA	0	0	0	509	0	32	64	0	83	180
PLECOPTERA	0	0	0	0	0	0	0	0	76	243
DIPTERA	5088	2035	10208	10717	8586	2162	16822	2035	6106	4182
TRICHOPTERA	64	32	32	541	1081	0	572	0	202	413
COLEOPTERA	0	0	0	0	1018	0	0	0	114	284
ODONATA	0	0	0	0	0	0	0	0	0	0
MISCELLANEOUS	11225	3053	15264	20861	18857	3085	8745	8173	7131	5535

Table 19. Summary of post-treatment benthic samples by taxonomic order from the reference area of experiment 2.

SUMMARY OF BENTHIC ORGANISMS BY TAXONOMIC ORDER
(numbers per square metre)
POST-TREATMENT SAMPLES - REFERENCE AREA
EXPERIMENT 2

TAXONOMIC ORDER	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12
EPHEMEROPTERA	0	0	0	0	0	509	0	32	64	0	0	0
PLECOPTERA	0	0	0	0	0	0	0	0	0	0	0	0
DIPTERA	6137	1018	5088	2035	10208	10717	8586	2162	16822	2035	1018	14501
TRICHOPTERA	0	0	64	32	32	541	1081	0	572	0	0	32
COLEOPTERA	0	0	0	0	0	0	1018	0	0	0	0	1018
ODONATA	0	0	0	0	0	0	0	0	0	0	32	0
MISCELLANEOUS	9158	3053	11225	3053	15264	20861	18857	3085	8745	8173	64	19462

TAXONOMIC ORDER	CORE 13	CORE 14	CORE 15	MEAN CORES 1-15	S.D. CORES 1-15
EPHEMEROPTERA	32	0	0	42	126
PLECOPTERA	0	0	0	0	0
DIPTERA	11194	2067	5088	6578	4973
TRICHOPTERA	1018	0	0	225	372
COLEOPTERA	0	0	0	136	346
ODONATA	0	0	0	2	8
MISCELLANEOUS	4070	0	1049	8408	7029

Table 20. Summary of post-treatment benthic samples by taxonomic order from the treatment area of experiment 2.

SUMMARY OF BENTHIC ORGANISMS BY TAXONOMIC ORDER
(numbers per square metre)
POST-TREATMENT SAMPLES - TREATMENT AREA
EXPERIMENT 2

TAXONOMIC ORDER	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12
EPHEMEROPTERA	0	0	32	0	0	0	0	0	0	0	0	0
PLECOPTERA	0	0	95	1272	0	0	0	0	0	0	0	0
DIPTERA	5470	5597	1940	15264	9158	9158	3593	3562	4738	509	4611	11766
TRICHOPTERA	0	0	64	890	32	1018	0	0	32	0	604	32
COLEOPTERA	509	0	254	1399	0	0	0	0	0	0	0	0
ODONATA	0	0	0	0	0	32	32	0	0	0	0	0
MISCELLANEOUS	4452	2035	26776	43248	3116	5120	8077	3053	7219	0	1526	541

TAXONOMIC ORDER	CORE 13	CORE 14	CORE 15	CORE 16	CORE 17	CORE 18	CORE 19	CORE 20	MEAN CORES 1-20	S.D. CORES 1-20
EPHEMEROPTERA	0	32	0	0	0	0	0	0	3	10
PLECOPTERA	0	0	0	0	0	0	0	0	68	277
DIPTERA	254	1113	763	1018	3053	1018	509	0	4155	4136
TRICHOPTERA	254	0	254	0	0	0	0	509	184	309
COLEOPTERA	254	0	0	0	0	0	0	0	121	320
ODONATA	0	0	0	0	0	0	0	0	3	10
MISCELLANEOUS	1781	1526	5088	509	2449	509	0	0	5851	10319

Table 21. Summary of pretreatment benthic samples by taxonomic order from the combined reference and treatment areas of experiment 3.

SUMMARY OF BENTHIC ORGANISMS BY TAXONOMIC ORDER
(numbers per square metre)
PRETREATMENT SAMPLES
EXPERIMENT 3

TAXONOMIC ORDER	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12
EPHEMEROPTERA	0	0	32	0	0	0	127	0	32	509	0	0
PLECOPTERA	0	0	0	0	0	0	0	0	0	0	0	0
DIPTERA	1018	14501	11194	2067	5088	2035	4070	27475	3053	363283	7632	72250
TRICHOPTERA	0	32	1018	0	0	0	0	64	0	1113	0	32
COLEOPTERA	0	1018	0	0	0	0	0	0	1018	0	509	0
ODONATA	32	0	0	0	0	0	0	32	0	32	0	0
MISCELLANEOUS	64	19462	4070	0	1049	13229	2035	7123	13229	6614	5088	7632

TAXONOMIC ORDER	CORE 13	CORE 14	MEAN CORES 1-14	S.D. CORES 1-14
EPHEMEROPTERA	0	0	50	132
PLECOPTERA	0	0	0	0
DIPTERA	5088	29510	39162	91741
TRICHOPTERA	0	1558	273	512
COLEOPTERA	0	0	182	365
ODONATA	0	0	7	13
MISCELLANEOUS	5088	45283	9283	11336

Table 22. Summary of post-treatment benthic samples by taxonomic order from the reference area of experiment 3.

SUMMARY OF BENTHIC ORGANISMS BY TAXONOMIC ORDER
(numbers per square metre)
POST-TREATMENT SAMPLES - REFERENCE AREA
EXPERIMENT 3

TAXONOMIC ORDER	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12
EPHEMEROPTERA	0	127	0	32	509	0	0	0	0	0	0	0
PLECOPTERA	0	0	0	0	0	0	0	0	0	0	0	0
DIPTERA	2035	4070	27475	3053	363283	7632	72250	5088	29510	4070	5883	254
TRICHOPTERA	0	0	64	0	1113	0	32	0	1558	32	32	254
COLEOPTERA	0	0	0	1018	0	509	0	0	0	0	0	254
ODONATA	0	0	32	0	32	0	0	0	0	0	0	0
MISCELLANEOUS	13229	2035	7123	13229	6614	5088	7632	5088	45283	3053	2035	763

TAXONOMIC ORDER	CORE 13	CORE 14	CORE 15	CORE 16	CORE 17	CORE 18	CORE 19	MEAN CORES 1-19	S.D. CORES 1-19
EPHEMEROPTERA	1018	0	0	32	0	0	0	90	247
PLECOPTERA	0	0	0	0	0	0	0	0	0
DIPTERA	14755	4070	11194	0	3562	12466	5120	30304	80162
TRICHOPTERA	0	32	32	0	0	64	0	169	410
COLEOPTERA	0	0	0	0	0	0	0	94	250
ODONATA	0	0	0	0	0	0	32	5	12
MISCELLANEOUS	12720	10271	17299	1018	0	763	9222	8551	9966

Table 23. Summary of post-treatment benthic samples by taxonomic order from the treatment area of experiment 3.

SUMMARY OF BENTHIC ORGANISMS BY TAXONOMIC ORDER
(numbers per square metre)
POST-TREATMENT SAMPLES - TREATMENT AREA
EXPERIMENT 3

TAXONOMIC ORDER	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12
EPHEMEROPTERA	0	32	0	0	0	0	0	64	0	0	32	0
PLECOPTERA	0	0	0	0	0	0	0	64	0	0	0	0
DIPTERA	509	6614	1018	2544	3053	3116	4579	4293	35648	1018	1018	2067
TRICHOPTERA	0	127	0	0	64	64	509	636	2035	0	0	0
COLEOPTERA	0	1526	0	0	0	0	509	541	0	0	32	509
ODONATA	0	0	0	0	0	0	0	0	0	0	0	0
MISCELLANEOUS	509	7664	0	1590	1018	3053	1081	3498	2035	3085	0	32

TAXONOMIC ORDER	CORE 13	CORE 14	CORE 15	CORE 16	CORE 17	CORE 18	CORE 19	MEAN CORES 1-19	S.D. CORES 1-19
EPHEMEROPTERA	0	0	0	0	0	0	32	8	17
PLECOPTERA	0	0	0	0	0	0	0	3	14
DIPTERA	1018	509	509	11225	509	1590	2131	4367	7812
TRICHOPTERA	0	0	0	1018	32	0	0	236	503
COLEOPTERA	0	0	0	0	0	763	0	204	393
ODONATA	0	0	0	0	0	0	0	0	0
MISCELLANEOUS	1018	32	32	24454	4134	9222	4198	3508	5544

Table 24. Detailed results of pretreatment benthic samples from the combined reference and treatment areas of experiment 1.

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
PRETREATMENT SAMPLES
EXPERIMENT 1

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12	CORE 13	CORE 14	CORE 15	CORE 16	CORE 17	CORE 18
EPHEMEROPTERA																			
Siphlonuridae																			
Anelitus	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ephemerellidae																			
Ephemerella	N	0	159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Heptageniidae																			
Stenonema	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Baetidae																			
Baetis	N	254	159	0	1081	95	32	0	0	0	0	0	0	0	0	0	32	32	0
Leptophlebiidae																			
Leptophlebia	N	0	0	0	0	32	0	0	0	0	0	0	32	0	0	0	64	986	0
Ephemeridae																			
Hexagenia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PLECOPTERA																			
Leuctridae																			
Leuctra	N	0	0	1018	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nemouridae																			
Nemoura	N	159	0	477	0	0	0	0	0	0	0	0	0	0	0	0	0	286	0
Capnidae																			
Allocapnia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIPTERA																			
Chironomidae																			
Pentaneurini	P	286	127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1018	32
Paramerina	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	64	0
Ablabesmyia	L	382	509	445	4452	159	2258	64	2385	2035	1018	0	0	0	0	0	318	32	0
Macropelopiini																			
Procladius	L	127	0	0	604	0	0	0	0	509	0	0	0	0	0	1018	0	32	0
Natarsia	L	318	541	0	2258	0	32	32	0	509	2035	0	0	0	0	0	223	1049	32
Chironomini	P	32	0	509	0	0	0	0	0	32	0	0	1049	0	0	0	0	0	0
"	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Polypedilum	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chironomus	L	0	0	0	572	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paracladopelma	L	0	0	0	32	32	0	0	127	509	509	0	64	0	0	0	0	350	0
Pseudochironomus	L	382	32	32	1558	32	0	95	191	0	0	0	0	0	0	0	0	0	32
Microtendipes	L	0	32	32	64	95	0	0	0	0	0	0	0	0	0	0	32	636	0
Tanytarsini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tanytarsus	L	1654	286	413	3116	0	2067	0	0	509	3053	0	0	509	0	1018	254	572	0
Rheotanytarsus	L	2512	159	0	1590	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Micropsecta	L	4420	1367	1558	4134	3053	4134	0	636	509	5088	0	0	0	0	7123	413	827	0
Corynoneurini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thienemanniella	L	763	0	541	0	0	0	0	0	0	0	0	0	254	0	0	0	954	0
Corynoneura	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1049

Table 24 cont'd

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
PRETREATMENT SAMPLES
EXPERIMENT 1

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12	CORE 13	CORE 14	CORE 15	CORE 16	CORE 17	CORE 18
DIPTERA cont'd																			
Chironomidae																			
Orthocladiini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	127	0	0
Cricotopus	L	3943	127	32	32	0	0	0	477	0	0	0	0	0	0	0	254	1049	1049
Synorthocladius	L	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pseudocricotopus	L	32	95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eukiefferiella	L	0	127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Parametriocnemus	L	127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Psectrocladius	L	0	64	0	0	0	0	32	0	0	0	0	0	0	0	0	0	32	0
Pseudosmittia	L	0	0	0	0	64	0	0	0	0	0	0	0	0	0	0	0	0	0
Simuliidae																			
Simulium	L	54791	0	3530	477	0	0	0	32	0	0	0	0	0	0	0	2290	0	15264
"	P	0	0	0	0	0	0	0	64	0	0	0	0	0	0	0	0	32	32
Prosimulium	L	22832	0	2385	0	64	64	572	95	0	0	0	0	0	318	0	2703	0	922
"	P	1495	0	604	0	32	32	0	0	0	0	254	0	0	0	0	95	0	32
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ectemnia	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Athericidae																			
Atherix	L	413	95	0	0	0	0	0	0	0	0	0	0	0	0	0	95	0	0
Ceratopogonidae																			
Culicoides	L	1272	0	541	32	1113	32	32	668	0	0	0	0	0	0	2035	286	2226	1208
Empididae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stratiomyidae	L	0	0	0	0	0	32	0	0	0	0	0	0	0	0	0	0	64	95
Tipulidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Muscidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tabanidae	L	0	0	95	32	0	223	0	191	0	32	0	0	0	0	32	0	0	64
TRICHOPTERA																			
Philopotamidae																			
Chimarra	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Psychomyiidae																			
Psychomia	L	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	0
Polycentropidae																			
Polycentropus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydropsychidae																			
Hydropsyche	L	95	0	0	0	32	0	0	95	0	0	0	0	0	0	0	32	32	0
Macronema	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Glossosmatidae																			
Glossosoma	L	0	0	0	509	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brachycentridae																			
Brachycentrus	L	0	0	0	0	32	32	32	0	0	0	0	0	0	0	0	0	0	0
Lepidostomatidae																			
Lepidostoma	L	318	286	32	64	0	32	0	32	509	0	254	0	254	0	1018	159	382	0

Table 24 cont'd

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
PRETREATMENT SAMPLES
EXPERIMENT 1

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12	CORE 13	CORE 14	CORE 15	CORE 16	CORE 17	CORE 18
TRICHOPTERA cont'd																			
Limnephilidae																			
Neophylax	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Platycentropus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydatophylax	L	0	32	0	95	32	413	0	64	95	32	0	0	0	0	0	0	127	0
Hydroptilidae																			
Oxyethira	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	0	0
Molannidae																			
Molanna	L	0	0	0	32	0	32	0	0	0	0	0	0	0	0	0	0	0	0
Leptoceridae																			
Nectopsyche	L	0	0	0	0	0	127	32	0	0	0	0	0	0	0	0	0	0	0
Oecetis	L	0	0	0	0	0	64	0	0	0	0	0	0	0	0	0	0	0	0
COLEOPTERA																			
Elmidae																			
Stenelmis	L	95	0	32	32	32	0	0	0	0	0	254	0	0	0	0	477	0	2067
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	0
ODONATA																			
Aeshnidae																			
Aeshna	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cordullidae																			
Dorocordulia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Libellulidae																			
Libellula	N	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Orthemis	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cordulegastridae																			
Cordulegastor	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gomphidae																			
Omphiogomphus		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MISCELLANEOUS																			
Nematoda		3911	382	2035	3562	32	0	0	541	0	0	254	1018	763	159	1018	700	3180	5438
Oligochaeta		3880	572	8236	4961	32	159	541	1367	509	509	1018	0	4070	0	1018	700	223	10240
Cyclopoida		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Harpacticoida		0	0	32	636	0	0	0	0	0	0	0	0	0	0	0	159	0	0
Ostracoda		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acarnina		1940	95	0	509	0	0	0	0	0	0	0	0	0	0	0	0	1113	0
Collembola		1177	350	0	7600	1018	0	509	223	0	0	0	0	0	0	0	795	1018	0
Leponis		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sphaerium		509	350	3053	541	0	0	509	604	1018	0	509	509	254	0	13229	382	0	95
Planorbis		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gordiidae		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hirudinea		0	32	0	32	0	0	0	0	0	32	0	0	0	0	0	0	32	0
Hyallella		0	0	0	2131	0	0	0	0	0	0	0	0	0	0	0	0	223	0
Aphidae		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 25. Detailed results of post-treatment benthic samples from the reference area of experiment 1.

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
POST-TREATMENT SAMPLES - REFERENCE AREA
EXPERIMENT 1

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12	CORE 13	CORE 14	CORE 15	CORE 16	CORE 17	CORE 18
EPHEMEROPTERA																			
Siphlonuridae																			
Ameletus	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ephemerellidae																			
Ephemerella	N	0	159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Heptageniidae																			
Stenonema	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Baetidae																			
Baetis	N	254	159	0	1081	95	32	0	0	0	0	0	0	509	0	0	509	0	0
Leptophlebiidae																			
Leptophlebia	N	0	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0
Ephemeridae																			
Hexagenia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	0	0	0
PLECOPTERA																			
Leuctridae																			
Leuctra	N	0	0	1018	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nemouridae																			
Nemoura	N	159	0	477	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capnidae																			
Allocapnia	N	0	0	0	0	0	0	0	0	0	0	0	0	509	0	0	0	0	1018
DIPTERA																			
Chironomidae																			
Pentaneurini	P	286	127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paramerina	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ablabesmyia	L	382	509	445	4452	159	2258	64	2385	0	0	0	0	0	0	0	0	0	0
Macropelopiini																			
Procladius	L	127	0	0	604	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Natarsia	L	318	541	0	2258	0	32	32	0	509	1526	0	0	0	2067	1526	0	2131	2035
Chironomini	P	32	0	509	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Polypedilum	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chironomus	L	0	0	0	572	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paracladopelma	L	0	0	0	32	32	0	0	127	0	0	541	0	0	0	541	0	0	0
Pseudochironomus	L	382	32	32	1558	32	0	95	191	0	0	0	0	0	0	0	509	0	0
Microtendipes	L	0	32	32	64	95	0	0	0	0	0	0	0	0	0	0	0	0	0
Tanytarsini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tanytarsus	L	1654	286	413	3116	0	2067	0	0	0	0	0	0	1018	0	0	1526	0	0
Rheotanytarsus	L	2512	159	0	1590	0	0	0	0	0	0	2544	1018	1018	0	1526	509	0	2035
Micropsecta	L	4420	1367	1558	4134	3053	4134	0	636	0	0	1018	0	763	2035	0	2035	0	2035
Corynoneurini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2035	0	0	0
Thienemanniella	L	763	0	541	0	0	0	0	0	0	0	509	0	1018	0	0	509	0	0
Corynoneura	L	0	0	0	0	0	0	0	0	0	0	509	0	0	0	0	0	0	0

Table 25 cont'd

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
POST-TREATMENT SAMPLES - REFERENCE AREA
EXPERIMENT 1

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12	CORE 13	CORE 14	CORE 15	CORE 16	CORE 17	CORE 18
DIPTERA cont'd																			
Chironomidae																			
Orthocladiini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cricotopus	L	3943	127	32	32	0	0	0	477	509	0	0	0	509	0	0	0	0	0
Synorthocladius	L	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	509
Pseudocricotopus	L	32	95	0	0	0	0	0	0	0	0	0	0	0	0	509	0	0	0
Eukiefferiella	L	0	127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Parametriocnemus	L	127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Psectrocladius	L	0	64	0	0	0	0	0	0	1018	509	0	0	0	0	0	0	0	0
Pseudosmittia	L	0	0	0	0	0	0	32	0	0	0	0	0	0	0	0	0	1049	0
Simuliidae						64	0	0	0	0	0	0	0	0	0	0	0	0	0
Simulium	L	54791	0	3530	477														
"	P	0	0	0		0	0	0	32	0	0	0	509	2290	0	0	3562	0	0
Prosimulium	L	22832	0	2385	0	0	0	0	64	0	0	0	0	0	0	0	0	0	0
"	P	1495	0	604	0	64	64	572	95	0	0	0	0	541	0	0	0	0	0
	A	0	0	0	0	32	32	0	0	32	0	509	0	254	0	0	0	0	0
Ectemnia	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1018	0	0
Athericidae																			
Atherix	L	413	95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ceratopogonidae																			
Culicoides	L	1272	0	541	32	1113	32	32	668	1018	0	0	0	1018	0	0	1526	0	509
Empididae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stratiomyidae	L	0	0	0	0	0	32	0	0	0	0	0	0	254	0	0	0	0	0
Tipulidae	L	0	0	0	0	0	0	0	0	32	0	0	0	0	0	0	0	0	0
Muscidae	L	0	0	95	32	0	223	0	191	0	0	0	0	0	0	0	0	0	0
Tabanidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRICHOPTERA																			
Philopotamidae																			
Chimarra	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Psychomyiidae																			
Psychomia	L	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Polycentropidae																			
Polycentropus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydropsychidae																			
Hydropsyche	L	95	0	0	0	32	0	0	95	0	0	0	0	0	0	0	0	0	0
Macronema	L	0	0	0	0	0	0	0	0	32	0	0	0	795	0	0	0	0	0
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Glossosomatidae																			
Glossosoma	L	0	0	0	509	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brachycentridae																			
Brachycentrus	L	0	0	0	0	32	32	32	0	0	0	0	0	0	0	0	0	0	0
Lepidostomatidae																			
Lepidostoma	L	318	286	32	64	0	32	0	32	0	0	0	0	509	0	0	0	0	0

Table 25 cont'd

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
POST-TREATMENT SAMPLES - REFERENCE AREA
EXPERIMENT 1

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12	CORE 13	CORE 14	CORE 15	CORE 16	CORE 17	CORE 18
TRICHOPTERA cont'd																			
Limnephilidae																			
Neophylax	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Platycentropus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	64	0
Hydatophylax	L	0	32	0	95	32	413	0	64	0	0	0	0	0	0	0	32	32	0
Hydroptilidae																			
Oxyethira	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Molannidae																			
Molanna	L	0	0	0	32	0	32	0	0	0	0	0	0	0	0	0	0	0	0
Leptoceridae																			
Nectopsyche	L	0	0	0	0	0	127	32	0	0	0	0	0	0	0	0	0	0	0
Oecetis	L	0	0	0	0	0	64	0	0	0	0	0	0	254	0	0	0	0	0
COLEOPTERA																			
Elmidae																			
Stenelmis	L	95	0	32	32	32	0	0	0	509	0	0	0	763	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ODONATA																			
Aeshnidae																			
Aeshna	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cordullidae																			
Dorocordulia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Libellulidae																			
Libellula	N	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Orthemis	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cordulegastridae																			
Cordulegaster	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gomphidae																			
Omphiogomphus		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MISCELLANEOUS																			
Nematoda		3911	382	2035	3562	32	0	0	541	0	0	2035	1018	2290	1018	0	6106	2035	1526
Oligochaeta		3880	572	8236	4961	32	159	541	1367	1526	509	572	2067	4865	3085	1526	0	0	1018
Cyclopoida		0	0	0	0	0	0	0	0	0	0	0	0	0	0	3562	0	0	0
Harpacticoida		0	0	32	636	0	0	0	0	509	0	0	509	254	0	0	0	0	0
Ostracoda		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acarnina		1940	95	0	509	0	0	0	0	0	0	0	0	254	0	0	0	0	509
Collembola		1177	350	0	7600	1018	0	509	223	0	509	0	0	0	0	0	0	0	0
Leponis		0	0	0	0	0	0	0	0	0	0	0	0	0	0	509	0	0	0
Sphaerium		509	350	3053	541	0	0	509	604	1018	0	0	0	1781	0	0	0	0	0
Planorbis		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gordiidae		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hirudinea		0	32	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hyallella		0	0	0	2131	0	0	0	0	0	0	0	0	0	0	0	0	32	0
Aphidae		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	509	0	0

Table 26. Detailed results of post-treatment benthic samples from the treatment area of experiment 1.

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
POST-TREATMENT SAMPLES - TREATMENT AREA
EXPERIMENT 1

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12	CORE 13	CORE 14	CORE 15	CORE 16	CORE 17	CORE 18	CORE 19	CORE 20
EPHEMEROPTERA																					
Siphlonuridae																					
Amelitus	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ephemerellidae																					
Ephemerella	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Heptageniidae																					
Stenonema	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Baetidae																					
Baetis	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leptophlebiidae																					
Leptophlebia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ephemeridae																					
Hexagenia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PLECOPTERA																					
Leuctridae																					
Leuctra	N	0	0	0	0	0	0	0	0	0	127	127	0	0	0	0	0	0	0	0	0
Nemouridae																					
Nemoura	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capnidae																					
Allocapnia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIPTERA																					
Chironomidae																					
Pentaneurini	P	0	2035	2067	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paramerina	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ablabesmyia	L	0	0	0	0	1018	0	0	0	0	127	0	0	0	0	0	0	0	0	0	0
Macropelopiini																					
Procladius	L	0	0	0	0	0	0	0	0	0	763	0	0	2035	286	0	1018	0	0	0	0
Natarsia	L	32	0	0	0	8173	1018	0	0	0	1431	509	0	1049	2035	0	509	1018	0	4070	2067
Chironomini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Polypedilum	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chironomus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paracladopelma	L	2099	0	0	0	32	0	0	0	0	0	127	32	0	0	0	509	0	0	0	32
Pseudochironomus	L	0	0	127	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Microtendipes	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tanytarsini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tanytarsus	L	1018	0	2035	2035	1018	0	2035	0	2035	1908	1272	1018	0	1272	1526	509	2035	254	2035	6106
Rheotanytarsus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Micropsecta	L	0	0	0	0	0	0	0	0	0	127	0	509	0	0	509	0	0	0	2035	4070
Corynoneurini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thienemanniella	L	0	0	0	0	0	0	0	0	0	254	254	0	0	0	0	0	0	0	0	0
Corynoneura	L	0	0	0	0	0	0	0	0	0	0	0	0	0	254	0	0	0	0	0	0

Table 26 cont'd

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
POST-TREATMENT SAMPLES - TREATMENT AREA
EXPERIMENT 1

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12	CORE 13	CORE 14	CORE 15	CORE 16	CORE 17	CORE 18	CORE 19	CORE 20
DIPTERA cont'd																					
Chironomidae																					
Orthocladiini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cricotopus	L	0	0	0	0	0	0	0	509	0	127	127	0	0	509	1018	0	0	0	0	0
Synorthocladius	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pseudocricotopus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eukiefferiella	L	0	2035	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Parametriocnemus	L	0	0	0	0	1018	0	0	0	2035	0	0	0	2035	1018	0	0	1018	0	0	4070
Psectrocladius	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pseudosmittia	L	0	0	0	0	0	0	0	0	0	382	0	0	0	0	0	0	0	0	0	0
Simuliidae																					
Simulium	L	0	0	0	0	6106	1018	0	0	0	254	127	1018	0	254	1018	0	1018	0	0	0
"	P	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Prosimulium	L	0	0	0	0	1018	0	0	0	0	0	0	0	0	0	509	0	0	0	0	0
"	P	0	0	0	2035	0	0	0	509	0	254	254	0	0	0	509	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ectemnia	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Athericidae																					
Atherix	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ceratopogonidae																					
Culicoides	L	2035	2035	2035	0	1018	0	0	509	0	1272	541	1018	32	0	4579	509	2035	827	0	2035
Empididae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stratiomyidae	L	0	0	0	0	0	0	0	509	0	0	0	0	0	0	0	0	0	0	0	0
Tipulidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Muscidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tabanidae	L	0	0	0	0	0	0	0	0	32	0	0	0	0	0	0	0	0	0	0	32
TRICHOPTERA																					
Philopotamidae																					
Chimarra	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Psychomyiidae																					
Psychomia	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Polycentropidae																					
Polycentropus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydropsychidae																					
Hydropsyche	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Macronema	L	0	0	0	32	0	0	0	0	0	0	0	32	0	0	0	0	0	0	0	0
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Glossosmatidae																					
Glossosoma	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brachycentridae																					
Brachycentrus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	254	0	0
Lepidostomatidae																					
Lepidostoma	L	0	0	0	0	0	0	0	0	0	254	0	0	0	254	0	0	0	0	0	0

Table 26 cont'd

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
POST-TREATMENT SAMPLES - TREATMENT AREA
EXPERIMENT 1

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12	CORE 13	CORE 14	CORE 15	CORE 16	CORE 17	CORE 18	CORE 19	CORE 20
TRICHOPTERA cont'd																					
Limnephilidae																					
Neophylax	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Platycentropus	L	0	0	0	32	0	95	0	0	32	64	0	0	0	32	32	0	0	0	32	413
Hydatophylax	L	0	0	0	0	0	0	0	0	0	0	0	0	0	254	0	0	0	0	0	32
Hydroptilidae																					
Oxyethira	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Molannidae																					
Molanna	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leptoceridae																					
Nectopsyche	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oecetis	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COLEOPTERA																					
Elmidae																					
Stenelmis	L	0	0	0	0	0	0	0	0	0	254	0	0	0	0	1018	509	0	254	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ODONATA																					
Aeshnidae																					
Aeshna	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cordullidae																					
Dorocordulia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Libellulidae																					
Libellula	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Orthemis	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cordulegastridae																					
Cordulegastor	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gomphidae																					
Onphiogomphus		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MISCELLANEOUS																					
Nematoda		1018	4102	0	4070	2035	0	4070	509	0	1272	509	0	0	0	509	1526	3053	2798	0	2035
Oligochaeta		2035	26458	2131	32	1049	32	32	2576	95	668	254	1526	1081	2067	7155	541	2035	795	32	32
Cyclopoida		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Harpacticoida		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2035
Ostracoda		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acarnina		0	0	0	0	2035	0	0	0	0	127	0	0	0	0	0	0	1018	0	0	0
Collembola		0	0	0	0	0	0	2035	0	0	0	0	0	0	0	0	0	0	0	0	0
Leponis		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sphaerium		0	0	2035	0	1018	0	0	509	0	0	0	509	1018	0	2544	0	0	0	2035	0
Planorbis		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gordiidae		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hirudinea		0	0	0	0	0	0	0	0	0	0	0	509	0	509	0	0	0	0	0	32
Hyallella		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1018	0	0	0
Aphidae		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 27. Detailed results of pretreatment benthic samples from the combined reference and treatment areas of experiment 2.

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
PRETREATMENT SAMPLES
EXPERIMENT 2

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12	CORE 13	CORE 14	CORE 15	CORE 16	CORE 17	CORE 18	CORE 19	CORE 20
EPHEMEROPTERA																					
Siphloneuridae																					
Amelitus	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ephemerellidae																					
Ephemerella	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Heptageniidae																					
Stenonema	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Baetidae																					
Baetis	N	0	0	0	0	509	0	0	509	0	0	0	0	0	0	0	0	0	0	0	0
Leptophlebiidae																					
Leptophlebia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	509	0	0	64	0
Ephemeridae																					
Hexagenia	N	0	0	0	0	0	0	32	0	0	0	0	0	0	0	0	0	0	32	0	0
PLECOPTERA																					
Leuctridae																					
Leuctra	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nemouridae																					
Nemoura	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capnidae																					
Allocapnia	N	0	0	0	0	509	0	0	0	0	1018	0	0	0	0	0	0	0	0	0	0
DIPTERA																					
Chironomidae																					
Pentaneurini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paramerina	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ablabesmyia	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4070	0	0	1145	2576	0
Macropelopiini																					
Procladius	L	0	0	0	0	0	0	0	0	0	0	0	0	2035	0	0	0	1526	0	3562	0
Natarsia	L	509	1526	0	0	0	2067	1526	0	2131	2035	0	0	0	0	4070	0	509	0	3053	2035
Chironomini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Polypedilum	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chironomus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paracladopelma	L	0	0	541	0	0	0	541	0	0	0	0	1018	0	0	32	0	0	0	0	0
Pseudochironomus	L	0	0	0	0	0	0	0	509	0	0	0	0	0	0	0	0	0	0	0	0
Microtendipes	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tanytarsini	P	0	0	0	0	1018	0	0	1526	0	0	0	0	0	0	0	0	0	0	0	0
Tanytarsus	L	0	0	2544	1018	1018	0	1526	509	0	2035	2035	0	1018	0	0	2544	1018	0	1526	0
Rheotanytarsus	L	0	0	0	0	0	0	4070	0	0	0	0	0	0	0	0	0	0	0	0	0
Micropsecta	L	0	0	1018	0	763	2035	0	2035	0	2035	4070	0	0	0	0	1526	1431	509	5088	0
Corynoneurini	P	0	0	0	0	0	0	2035	0	0	0	0	0	0	0	0	0	0	0	0	0
Thienemanniella	L	0	0	509	0	1018	0	0	509	0	0	0	0	0	0	0	509	0	0	0	0
Corynoneura	L	0	0	509	0	0	0	0	0	0	0	0	0	0	0	0	0	509	0	1018	0

Table 27 cont'd

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
PRETREATMENT SAMPLES
EXPERIMENT 2

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12	CORE 13	CORE 14	CORE 15	CORE 16	CORE 17	CORE 18	CORE 19	CORE 20
DIPTERA cont'd																					
Chironomidae																					
Orthocladiini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cricotopus	L	509	0	0	0	509	0	0	0	0	509	0	0	0	0	1018	2035	509	0	0	0
Synorthocladius	L	0	0	0	0	0	0	509	0	0	0	0	0	0	0	0	0	0	0	0	0
Pseudocricotopus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eukiefferiella	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Parametriocnemus	L	1018	509	0	0	0	0	0	0	1049	0	0	0	0	0	0	509	0	0	0	0
Psectrocladius	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pseudosmittia	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Simuliidae																					
Simulium	L	0	0	0	509	2290	0	0	3562	0	0	0	0	0	0	0	0	0	0	0	0
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	1018	0	0	0	0	0	0
Prosimulium	L	0	0	0	0	541	0	0	0	0	0	0	0	0	0	0	509	0	0	0	0
"	P	32	0	509	0	254	0	0	1018	0	0	0	0	0	0	0	509	2067	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ectemnia	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Athericidae																					
Atherix	L	0	0	0	0	0	0	0	509	0	0	0	0	0	0	0	0	0	0	0	0
Ceratopogonidae																					
Culicoides	L	1018	0	0	0	1018	0	0	1526	0	509	0	0	2035	1018	1018	2544	1018	509	0	0
Empididae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stratiomyidae	L	0	0	0	0	254	0	0	0	0	0	0	0	0	0	0	32	0	0	0	0
Tipulidae	L	32	0	0	0	0	0	0	0	0	0	32	0	0	0	0	0	0	0	0	0
Muscidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tabanidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRICHOPTERA																					
Philopotamidae																					
Chimarra	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Psychomyiidae																					
Psychomia	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Polycentropidae																					
Polycentropus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydropsychidae																					
Hydropsyche	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Macronema	L	32	0	0	0	795	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Glossosmatidae																					
Glossosoma	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brachycentridae																					
Brachycentrus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lepidostomatidae																					
Lepidostoma	L	0	0	0	0	509	0	0	0	0	0	0	0	0	0	0	0	1018	0	509	0

Table 27 cont'd

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
PRETREATMENT SAMPLES
EXPERIMENT 2

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12	CORE 13	CORE 14	CORE 15	CORE 16	CORE 17	CORE 18	CORE 19	CORE 20
TRICHOPTERA cont'd																					
Limnephilidae																					
Neophylax	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Platycentropus	L	0	0	0	0	0	0	0	0	64	0	0	0	32	32	0	0	0	0	32	0
Hydatophylax	L	0	0	0	0	0	0	0	32	32	0	0	0	32	0	32	32	32	0	32	0
Hydroptilidae																					
Oxyethira	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	509	0	0	0	0
Molannidae																					
Molanna	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leptoceridae																					
Nectopsyche	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oecetis	L	0	0	0	0	254	0	0	0	0	0	0	0	0	0	0	0	32	0	0	0
COLEOPTERA																					
Elmidae																					
Stenelmis	L	509	0	0	0	763	0	0	0	0	0	0	0	0	0	0	0	1018	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ODONATA																					
Aeshnidae																					
Aeshna	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cordullidae																					
Dorocordulia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Libellulidae																					
Libellula	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Orthemis	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cordulegastridae																					
Cordulegastor	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gomphidae																					
Ophiogomphus		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MISCELLANEOUS																					
Nematoda		0	0	2035	1018	2290	1018	0	6106	2035	1526	0	2035	4070	2035	0	14246	1018	1018	1526	0
Oligochaeta		1526	509	572	2067	4865	3085	1526	0	0	1018	8141	1018	4102	1018	2035	2035	3562	32	1622	2067
Cyclopoida		0	0	0	0	0	0	3562	0	0	0	0	0	0	0	0	0	0	0	0	0
Harpacticoida		509	0	0	509	254	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ostracoda		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acarnina		0	0	0	0	254	0	0	0	0	509	0	0	0	0	0	509	0	0	0	0
Collembola		0	509	0	0	0	0	0	0	0	0	0	0	0	0	0	1018	0	1526	5088	6106
Lepomis		0	0	0	0	0	0	509	0	0	0	0	0	0	0	0	0	0	0	0	0
Sphaerium		1018	0	0	0	1781	0	0	0	0	0	1018	0	3053	0	13229	3053	13738	509	0	0
Planorbis		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gordiidae		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hirudinea		0	0	0	0	0	0	0	0	32	0	0	0	0	0	0	0	32	0	509	0
Hyallella		0	0	0	0	0	0	0	509	0	0	0	0	0	0	0	0	509	0	0	0
Aphidae		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 28. Detailed results of post-treatment benthic samples from the reference area of experiment 2.

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
POST-TREATMENT SAMPLES - REFERENCE AREA
EXPERIMENT 2

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12	CORE 13	CORE 14	CORE 15
EPHEMEROPTERA																
Siphlonuridae																
Ameletus	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ephemerellidae																
Ephemerella	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Heptageniidae																
Stenonema	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Baetidae																
Baetis	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leptophlebiidae																
Leptophlebia	N	0	0	0	0	0	509	0	0	64	0	0	0	32	0	0
Ephemeridae																
Hexagenia	N	0	0	0	0	0	0	0	32	0	0	0	0	0	0	0
PLECOPTERA																
Leuctridae																
Leuctra	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nemouridae																
Nemoura	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capnidae																
Allocapnia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIPTERA																
Chironomidae																
Pentaneurini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paramerina	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3053
Ablabesmyia	L	0	0	0	0	4070	0	0	1145	2576	0	0	1018	0	0	0
Macropelopiini																
Procladius	L	0	0	2035	0	0	0	1526	0	3562	0	0	1018	1018	0	0
Natarsia	L	0	0	0	0	4070	0	509	0	3053	2035	0	0	0	0	0
Chironomini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Polypedilum	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chironomus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paracladopelma	L	0	1018	0	0	32	0	0	0	0	0	0	4070	0	0	0
Pseudochironomus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Microtendipes	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tanytarsini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tanytarsus	L	2035	0	1018	0	0	2544	1018	0	1526	0	0	1018	0	0	0
Rheotanytarsus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Micropsecta	L	4070	0	0	0	0	1526	1431	509	5088	0	0	3053	7123	0	0
Corynoneurini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thienemanniella	L	0	0	0	0	0	509	0	0	0	0	0	0	0	0	0
Corynoneura	L	0	0	0	0	0	0	509	0	1018	0	0	0	0	0	0

Table 28 cont'd

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
POST-TREATMENT SAMPLES - REFERENCE AREA
EXPERIMENT 2

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12	CORE 13	CORE 14	CORE 15
DIPTERA cont'd																
Chironomidae																
Orthocladiini	P	0	0	0	0	1018	2035	509	0	0	0	0	0	0	0	0
Cricotopus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Synorthocladius	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pseudocricotopus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eukiefferiella	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paratriocnemus	L	0	0	0	0	0	509	0	0	0	0	0	0	0	0	0
Psectrocladius	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pseudosmittia	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Simuliidae																
Simulium	L	0	0	0	0	0	0	0	0	0	0	1018	0	0	2067	1018
"	P	0	0	0	1018	0	0	0	0	0	0	0	0	0	0	0
Prosimulium	L	0	0	0	0	0	509	0	0	0	0	0	0	0	0	0
"	P	0	0	0	0	0	509	2067	0	0	0	0	3307	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ectemnia	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Athericidae																
Atherix	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ceratopogonidae																
Culicoides	L	0	0	2035	1018	1018	2544	1018	509	0	0	0	1018	3053	0	1018
Empididae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stratiomyidae	L	0	0	0	0	0	32	0	0	0	0	0	0	0	0	0
Tipulidae	L	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Muscidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tabanidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRICHOPTERA																
Philopotamidae																
Chimarra	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Psychomyiidae																
Psychomia	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Polycentropidae																
Polycentropus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	P	0	0	0	0	0	0	0	0	0	0	0	32	0	0	0
Hydropsychidae																
Hydropsyche	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Macronema	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Glossosmatidae																
Glossosoma	L	0	0	0	0	0	0	0	0	0	0	0	0	1018	0	0
Brachycentridae																
Brachycentrus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lepidostomatidae																
Lepidostoma	L	0	0	0	0	0	0	1018	0	509	0	0	0	0	0	0

Table 28 cont'd

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
POST-TREATMENT SAMPLES - REFERENCE AREA
EXPERIMENT 2

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12	CORE 13	CORE 14	CORE 15
TRICHOPTERA cont'd																
Limnephilidae																
Neophylax	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Platycentropus	L	0	0	32	32	0	0	0	0	32	0	0	0	0	0	0
Hydatophylax	L	0	0	32	0	32	32	32	0	32	0	0	0	0	0	0
Hydroptilidae																
Oxyethira	L	0	0	0	0	0	509	0	0	0	0	0	0	0	0	0
Molannidae																
Molanna	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leptoceridae																
Nectopsyche	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oecetis	L	0	0	0	0	0	0	32	0	0	0	0	0	0	0	0
COLEOPTERA																
Elmidae																
Stenelmis	L	0	0	0	0	0	0	1018	0	0	0	0	1018	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ODONATA																
Aeshnidae																
Aeshna	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cordullidae																
Dorocordulia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Libellulidae																
Libellula	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Orthemis	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cordulegastridae																
Cordulegastor	N	0	0	0	0	0	0	0	0	0	0	32	0	0	0	0
Gomphidae																
Omphiogomphus		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MISCELLANEOUS																
Nematoda		0	2035	4070	2035	0	14246	1018	1018	1526	0	0	0	3053	0	0
Oligochaeta		8141	1018	4102	1018	2035	2035	3562	32	1622	2067	64	64	0	0	1018
Cyclopoida		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Harpacticoida		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ostracoda		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acarnina		0	0	0	0	0	509	0	0	0	0	0	0	0	0	0
Collembola		0	0	0	0	0	1018	0	1526	5088	6106	0	1018	0	0	0
Leponis		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sphaerium		1018	0	3053	0	13229	3053	13738	509	0	0	0	18380	1018	0	0
Planorbis		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gordiidae		0	0	0	0	0	0	0	0	0	0	0	0	0	0	32
Hirudinea		0	0	0	0	0	0	32	0	509	0	0	0	0	0	0
Hyallella		0	0	0	0	0	0	509	0	0	0	0	0	0	0	0
Aphidae		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 29. Detailed results of post-treatment benthic samples from the treatment area of experiment 2.

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
POST-TREATMENT SAMPLES - TREATMENT AREA
EXPERIMENT 2

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12	CORE 13	CORE 14	CORE 15	CORE 16	CORE 17	CORE 18	CORE 19	CORE 20
EPHEMEROPTERA																					
Siphlonuridae																					
Ameletus	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ephemerellidae																					
Ephemerella	N	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Heptageniidae																					
Stenonema	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Baetidae																					
Baetis	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leptophlebiidae																					
Leptophlebia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	32	0	0	0	0	0	0
Ephemeridae																					
Hexagenia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PLECOPTERA																					
Leuctridae																					
Leuctra	N	0	0	64	1272	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nemouridae																					
Nemoura	N	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capnidae																					
Allocapnia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIPTERA																					
Chironomidae																					
Pentaneurini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paramerina	L	0	0	0	0	0	0	0	0	0	0	0	32	0	0	0	0	0	0	0	0
Ablabesmyia	L	2639	1018	413	541	1018	0	445	0	0	0	2035	1018	0	0	0	0	0	0	0	0
Macropelopiini																					
Procladius	L	0	0	0	0	1018	0	0	0	0	0	509	0	0	0	0	0	0	0	0	0
Natarsia	L	0	509	191	350	1018	0	32	0	0	0	509	2035	0	0	0	0	0	0	0	0
Chironomini	P	32	0	0	191	0	0	0	0	572	0	32	0	0	1049	0	0	0	0	0	0
"	L	64	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Polypedilum	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chironomus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paracladopelma	L	0	0	0	0	0	0	0	0	2003	0	509	509	0	64	0	0	0	0	0	0
Pseudochironomus	L	0	0	32	32	1018	1018	0	509	32	0	0	0	0	0	0	0	0	0	0	0
Microtendipes	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tanytarsini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tanytarsus	L	0	0	0	223	2035	0	541	0	0	0	509	3053	0	0	509	0	0	0	0	0
Rheotanytarsus	L	541	0	191	541	0	0	254	0	0	0	0	0	0	0	0	0	0	0	0	0
Micropsecta	L	1049	1526	223	95	0	5088	509	2035	509	0	509	5088	0	0	0	0	0	0	0	0
Corynoneurini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	254	0	0	0	0	0
Thienemanniella	L	0	0	0	32	0	0	254	0	0	0	0	0	0	0	0	0	0	0	0	0
Corynoneura	L	0	0	32	254	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 29 cont'd

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
POST-TREATMENT SAMPLES - TREATMENT AREA
EXPERIMENT 2

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12	CORE 13	CORE 14	CORE 15	CORE 16	CORE 17	CORE 18	CORE 19	CORE 20
DIPTERA cont'd																					
Chironomidae																					
Orthocladiini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cricotopus	L	0	0	95	827	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Synorthocladius	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pseudocricotopus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eukiefferiella	L	0	509	0	0	0	0	0	0	0	0	0	0	0	0	0	509	0	0	0	0
Paranetriocnemus	L	0	0	0	286	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Psectrocladius	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pseudosmittia	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Simuliidae																					
Simulium	L	1081	509	95	5215	0	0	477	0	0	0	0	0	0	0	0	0	2035	0	0	0
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Prosimulium	L	64	509	32	95	0	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0
"	P	0	0	64	1272	0	0	0	0	0	0	0	0	254	0	0	0	0	0	509	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ectemnia	L	0	0	0	1622	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Athericidae																					
Atherix	L	0	0	0	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0
Ceratopogonidae																					
Culicoides	L	0	509	541	3562	3053	3053	1049	1018	1558	509	0	0	0	0	0	509	1018	1018	0	0
Empididae	L	0	509	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stratiomyidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tipulidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Muscidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tabanidae	L	0	0	0	95	0	0	0	0	32	0	0	32	0	0	0	0	0	0	0	0
TRICHOPTERA																					
Philopotamidae																					
Chimarra	L	0	0	0	0	0	1018	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Psychomyiidae																					
Psychomia	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Polycentropidae																					
Polycentropus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydropsychidae																					
Hydropsyche	L	0	0	32	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Macronema	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Glossosmatidae																					
Glossosoma	L	0	0	0	159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brachycentridae																					
Brachycentrus	L	0	0	0	95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lepidostomatidae																					
Lepidostoma	L	0	0	0	572	0	0	0	0	0	0	509	0	254	0	254	0	0	0	0	0

Table 29 cont'd

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
POST-TREATMENT SAMPLES - TREATMENT AREA
EXPERIMENT 2

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12	CORE 13	CORE 14	CORE 15	CORE 16	CORE 17	CORE 18	CORE 19	CORE 20
TRICHOPTERA cont'd																					
Limnephilidae																					
Neophylax	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Platycentropus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydatophylax	L	0	0	0	0	32	0	0	0	32	0	95	32	0	0	0	0	0	0	0	0
Hydroptilidae																					
Oxyethira	L	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Molannidae																					
Molanna	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leptoceridae																					
Nectopsyche	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oecetis	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	509
COLEOPTERA																					
Elmidae																					
Stenelmis	L	509	0	254	1367	0	0	0	0	0	0	0	0	254	0	0	0	0	0	0	0
"	A	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ODONATA																					
Aeshnidae																					
Aeshna	N	0	0	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cordullidae																					
Dorocordulia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Libellulidae																					
Libellula	N	0	0	0	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0
Orthemis	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cordulegastridae																					
Cordulegastor	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gomphidae																					
Omphiogomphus		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MISCELLANEOUS																					
Nematoda		3657	0	14437	13642	0	0	2067	1018	2131	0	0	0	254	1018	763	0	0	509	0	0
Oligochaeta		636	1526	12084	25440	3116	3085	5374	2035	5088	0	509	509	1018	0	4070	0	1940	0	0	0
Cyclopoida		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Harpacticoida		32	0	95	0	0	0	604	0	0	0	0	0	0	0	0	0	0	0	0	0
Ostracoda		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acarnina		0	0	95	1558	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Collembola		0	509	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lepomis		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	509	0	0	0
Sphaerium		95	0	64	2608	0	2035	0	0	0	0	1018	0	509	509	254	509	0	0	0	0
Planorbis		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gordiidae		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hirudinea		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hyallella		32	0	0	0	0	0	0	0	0	0	0	32	0	0	0	0	0	0	0	0
Aphidae		0	0	0	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 30. Detailed results of pretreatment benthic samples from the combined reference and treatment areas of experiment 3.

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
PRETREATMENT SAMPLES
EXPERIMENT 3

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12	CORE 13	CORE 14
EPHEMEROPTERA															
Siphloneuridae															
Ameletus	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ephemerellidae															
Ephemerella	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Heptageniidae															
Stenonema	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Baetidae															
Baetis	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leptophlebiidae															
Leptophlebia	N	0	0	32	0	0	0	127	0	32	0	0	0	0	0
Ephemeridae															
Hexagenia	N	0	0	0	0	0	0	0	0	0	509	0	0	0	0
PLECOPTERA															
Leuctridae															
Leuctra	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nemouridae															
Nemoura	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capnidae															
Allocapnia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIPTERA															
Chironomidae															
Pentaneurini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paramerina	L	0	0	0	0	3053	0	0	0	0	0	0	0	0	0
Ablabesmyia	L	0	1018	0	0	0	0	0	0	0	1526	0	0	0	0
Macropelopiini															
Procladius	L	0	1018	1018	0	0	0	1018	0	0	1018	1526	0	0	0
Natarsia	L	0	0	0	0	0	0	0	0	0	0	0	1018	1018	509
Chironomini	P	0	0	0	0	0	0	0	0	0	0	0	0	1018	0
"	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Polypedilum	L	0	0	0	0	0	0	0	0	0	509	0	0	0	0
Chironomus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paracladopelma	L	0	4070	0	0	0	0	0	0	0	509	0	0	0	0
Pseudochironomus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Microtendipes	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tanytarsini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tanytarsus	L	0	1018	0	0	0	0	0	0	0	1526	0	0	2035	1526
Rheotanytarsus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Micropsecta	L	0	3053	7123	0	0	1018	3053	1018	0	1018	0	0	0	509
Corynoneurini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thienemanniella	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Corynoneura	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 30 cont'd

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
PRETREATMENT SAMPLES
EXPERIMENT 3

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12	CORE 13	CORE 14
DIPTERA cont'd															
Chironomidae															
Orthocladiini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cricotopus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	1018
Synorthocladius	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pseudocricotopus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eukiefferiella	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Parametriocnemus	L	0	0	0	0	0	0	0	0	0	509	0	0	0	509
Psectrocladius	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pseudosmittia	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Simuliidae															
Simulium	L	1018	0	0	2067	1018	0	0	18317	0	301210	4579	60038	1018	20352
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Prosimulium	L	0	0	0	0	0	0	0	2035	0	28493	0	5088	0	3562
"	P	0	3307	0	0	0	0	0	0	0	509	1526	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ectemnia	L	0	0	0	0	0	0	0	1018	0	25949	0	6106	0	509
Athericidae															
Atherix	L	0	0	0	0	0	0	0	0	0	509	0	0	0	0
Ceratopogonidae															
Culicoides	L	0	1018	3053	0	1018	1018	0	5088	3053	0	0	0	0	1018
Empididae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stratiomyidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tipulidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Muscidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tabanidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRICHOPTERA															
Philopotamidae															
Chimarra	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Psychomyiidae															
Psychomia	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Polycentropidae															
Polycentropus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	P	0	32	0	0	0	0	0	0	0	0	0	0	0	0
Hydropsychidae															
Hydropsyche	L	0	0	0	0	0	0	0	0	0	0	0	0	0	32
Macronema	L	0	0	0	0	0	0	0	32	0	1113	0	32	0	0
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Glossosmatidae															
Glossosoma	L	0	0	1018	0	0	0	0	0	0	0	0	0	0	0
Brachycentridae															
Brachycentrus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lepidostomatidae															
Lepidostoma	L	0	0	0	0	0	0	0	0	0	0	0	0	0	1526

Table 30 cont'd

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
PRETREATMENT SAMPLES
EXPERIMENT 3

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12	CORE 13	CORE 14
TRICHOPTERA cont'd															
Limnephilidae															
Neophylax	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Platycentropus	L	0	0	0	0	0	0	0	32	0	0	0	0	0	0
Hydatophylax	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydroptilidae															
Oxyethira	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Molannidae															
Molanna	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leptoceridae															
Nectopsyche	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oecetis	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COLEOPTERA															
Elmidae															
Stenelmis	L	0	1018	0	0	0	0	0	0	1018	0	509	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ODONATA															
Aeshnidae															
Aeshna	N	0	0	0	0	0	0	0	0	0	32	0	0	0	0
Cordullidae															
Dorocordulia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Libellulidae															
Libellula	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Orthemis	N	0	0	0	0	0	0	0	32	0	0	0	0	0	0
Cordulegastridae															
Cordulegastor	N	32	0	0	0	0	0	0	0	0	0	0	0	0	0
Gomphidae															
Omphiogomphus		0	0	0	0	0	0	0	0	0	0	0	0	0	0
MISCELLANEOUS															
Nematoda		0	0	3053	0	0	4070	1018	1018	1018	1526	1018	5088	2035	24422
Oligochaeta		64	64	0	0	1018	7123	1018	1018	3053	509	2035	0	3053	15773
Cyclopoida		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Harpacticoida		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ostracoda		0	0	0	0	0	0	0	0	0	0	0	2035	0	0
Acarnina		0	0	0	0	0	0	0	0	0	0	0	0	0	509
Collembola		0	1018	0	0	0	0	0	0	0	0	0	0	0	0
Lepomis		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sphaerium		0	18380	1018	0	0	2035	0	5088	6106	1018	1526	0	0	4579
Planorbis		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gordiidae		0	0	0	0	32	0	0	0	0	0	0	0	0	0
Hirudinea		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hyallella		0	0	0	0	0	0	0	0	3053	3562	509	509	0	0
Aphidae		0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 31. Detailed results of post-treatment benthic samples from the reference area of experiment 3.

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
POST-TREATMENT SAMPLES - REFERENCE AREA
EXPERIMENT 3

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12	CORE 13	CORE 14	CORE 15	CORE 16	CORE 17	CORE 18	CORE 19
EPHEMEROPTERA																				
Siphlonuridae																				
Amelitus	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ephemerellidae																				
Ephemerella	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Heptageniidae																				
Stenonema	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Baetidae																				
Baetis	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leptophlebiidae																				
Leptophlebia	N	0	127	0	32	0	0	0	0	0	0	0	0	1018	0	0	0	0	0	0
Ephemeridae																				
Hexagenia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	0	0	0
PLECOPTERA																				
Leuctridae																				
Leuctra	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nemouridae																				
Nemoura	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capnidae																				
Allocapnia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIPTERA																				
Chironomidae																				
Pentaneurini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paramerina	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ablabesmyia	L	0	0	0	0	1526	0	0	0	0	0	0	0	509	0	0	0	0	0	0
Macropelopiini																				
Procladius	L	0	1018	0	0	1018	1526	0	0	0	0	0	0	0	0	2035	0	509	0	1018
Natarsia	L	0	0	0	0	0	0	1018	1018	509	0	0	0	0	1018	0	0	0	0	1018
Chironomini	P	0	0	0	0	0	0	0	1018	0	0	0	0	509	0	0	0	0	0	0
"	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Polypedilum	L	0	0	0	0	509	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chironomus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paracladopelma	L	0	0	0	0	509	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pseudochironomus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Microtendipes	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	509	0	0
Tanytarsini	P	0	0	0	0	0	0	0	0	0	0	254	0	0	0	0	0	0	0	0
Tanytarsus	L	0	0	0	0	1526	0	0	2035	1526	1018	254	0	0	0	2035	0	1526	0	0
Rheotanytarsus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Micropsecta	L	1018	3053	1018	0	1018	0	0	0	509	0	0	0	509	0	0	0	0	0	2035
Corynoneurini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	254	0
Thienemanniella	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Corynoneura	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 31 cont'd

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
POST-TREATMENT SAMPLES - REFERENCE AREA
EXPERIMENT 3

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12	CORE 13	CORE 14	CORE 15	CORE 16	CORE 17	CORE 18	CORE 19
DIPTERA cont'd																				
Chironomidae																				
Orthocladiini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1018	0	0	0	0
Cricotopus	L	0	0	0	0	0	0	0	0	1018	0	0	0	1018	0	0	0	0	0	0
Synorthocladius	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pseudocricotopus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eukiefferiella	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Parametriocnemus	L	0	0	0	0	509	0	0	0	509	0	0	0	0	0	0	0	0	0	0
Psectrocladius	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pseudosmittia	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	509	0	0
Simuliidae																				
Simulium	L	0	0	18317	0	301210	4579	60038	1018	20352	3053	5342	254	11194	2035	1018	0	0	11957	1018
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Prosimulium	L	0	0	2035	0	28493	0	5088	0	3562	0	0	0	0	0	0	0	0	0	0
"	P	0	0	0	0	509	1526	0	0	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3053	0	0	0	0
Ectemnia	L	0	0	1018	0	25949	0	6106	0	509	0	0	0	509	0	1018	0	0	0	0
Athericidae																				
Atherix	L	0	0	0	0	509	0	0	0	0	0	0	0	0	0	0	0	0	254	0
Ceratopogonidae																				
Culicoides	L	1018	0	5088	3053	0	0	0	0	1018	0	0	0	509	1018	1018	0	0	0	0
Empididae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stratiomyidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tipulidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	509	0	0
Muscidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tabanidae	L	0	0	0	0	0	0	0	0	0	0	32	0	0	0	0	0	0	0	32
TRICHOPTERA																				
Philopotamidae																				
Chimarra	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Psychomyiidae																				
Psychomia	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Polycentropidae																				
Polycentropus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydropsychidae																				
Hydropsyche	L	0	0	0	0	0	0	0	0	32	0	0	0	0	0	0	0	0	0	0
Macronema	L	0	0	32	0	1113	0	32	0	0	0	0	0	0	0	0	0	0	0	0
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Glossosmatidae																				
Glossosoma	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brachycentridae																				
Brachycentrus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lepidostomatidae																				
Lepidostoma	L	0	0	0	0	0	0	0	0	1526	0	0	254	0	0	0	0	0	0	0

Table 31 cont'd

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
POST-TREATMENT SAMPLES - REFERENCE AREA
EXPERIMENT 3

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12	CORE 13	CORE 14	CORE 15	CORE 16	CORE 17	CORE 18	CORE 19
TRICHOPTERA cont'd																				
Limnephilidae																				
Neophylax	L	0	0	0	0	0	0	0	0	0	32	32	0	0	0	0	0	0	0	0
Platycentropus	L	0	0	32	0	0	0	0	0	0	0	0	0	0	32	32	0	0	64	0
Hydatophylax	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydroptilidae																				
Oxyethira	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Molannidae																				
Molanna	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leptoceridae																				
Nectopsyche	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oecetis	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COLEOPTERA																				
Elmidae																				
Stenelmis	L	0	0	0	1018	0	509	0	0	0	0	0	254	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ODONATA																				
Aeshnidae																				
Aeshna	N	0	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	32
Cordullidae																				
Dorocordulia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Libellulidae																				
Libellula	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Orthemis	N	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cordulegastridae																				
Cordulegastor	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gomphidae																				
Omphiogomphus		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MISCELLANEOUS																				
Nematoda		4070	1018	1018	1018	1526	1018	5088	2035	24422	0	1018	254	5088	1018	0	509	0	763	3053
Oligochaeta		7123	1018	1018	3053	509	2035	0	3053	15773	3053	509	0	4070	1081	1018	509	0	0	4134
Cyclopoida		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Harpacticoida		0	0	0	0	0	0	0	0	0	0	0	254	0	0	0	0	0	0	0
Ostracoda		0	0	0	0	0	0	2035	0	0	0	0	0	0	0	0	0	0	0	0
Acarnina		0	0	0	0	0	0	0	0	509	0	0	0	0	0	0	0	0	0	0
Collembola		0	0	0	0	0	0	0	0	0	0	0	254	0	1018	0	0	0	0	0
Lepomis		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sphaerium		2035	0	5088	6106	1018	1526	0	0	4579	0	509	0	3562	7123	15264	0	0	0	1018
Planorbis		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gordiidae		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hirudinea		0	0	0	0	0	0	0	0	0	0	0	0	0	32	0	0	0	0	0
Hyallella		0	0	0	3053	3562	509	509	0	0	0	0	0	0	0	1018	0	0	0	1018
Aphidae		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 32. Detailed results of post-treatment benthic samples from the treatment area of experiment 3.

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
POST-TREATMENT SAMPLES - TREATMENT AREA
EXPERIMENT 3

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12	CORE 13	CORE 14	CORE 15	CORE 16	CORE 17	CORE 18	CORE 19
EPHEMEROPTERA																				
Siphloneuridae																				
Amelitus	N	0	0	0	0	0	0	0	64	0	0	0	0	0	0	0	0	0	0	0
Ephemerellidae																				
Ephemerella	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Heptageniidae																				
Stenonema	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Baetidae																				
Baetis	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leptophlebiidae																				
Leptophlebia	N	0	32	0	0	0	0	0	0	0	0	32	0	0	0	0	0	0	0	32
Ephemeridae																				
Hexagenia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PLECOPTERA																				
Leuctridae																				
Leuctra	N	0	0	0	0	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0
Nemouridae																				
Nemoura	N	0	0	0	0	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0
Capnidae																				
Allocapnia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIPTERA																				
Chironomidae																				
Pentaneurini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	509	0	0	0	0	0
Paramerina	L	0	0	0	0	0	0	0	32	1018	0	0	0	0	0	0	0	0	0	0
Ablabesmyia	L	0	0	0	0	0	0	0	0	2035	0	0	0	0	0	0	0	0	0	0
Macropelopiini																				
Procladius	L	0	509	0	1018	0	0	2544	382	1018	0	0	0	0	0	0	1018	0	254	0
Natarsia	L	0	1018	0	0	0	0	0	191	3053	0	0	0	0	0	0	0	0	254	0
Chironomini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Polypedilum	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chironomus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paracladopelma	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pseudochironomus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Microtendipes	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tanytarsini	P	0	1526	0	0	0	0	0	0	1018	0	0	0	0	0	0	0	0	0	0
Tanytarsus	L	0	0	0	509	0	0	1018	382	6106	0	0	0	0	0	0	1018	0	509	1049
Rheotanytarsus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Micropsecta	L	0	509	1018	509	509	0	509	95	13229	0	0	0	0	0	0	7123	509	286	1018
Corynoneurini	P	0	0	0	0	0	0	0	159	0	0	0	0	0	0	0	0	0	0	0
Thienemanniella	L	0	0	0	0	0	0	0	127	0	0	0	0	0	0	0	0	0	0	0
Corynoneura	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 32 cont'd

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
POST-TREATMENT SAMPLES - TREATMENT AREA
EXPERIMENT 3

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12	CORE 13	CORE 14	CORE 15	CORE 16	CORE 17	CORE 18	CORE 19
DIPTERA cont'd																				
Chironomidae																				
Orthocladiini	P	0	0	0	0	0	0	0	64	0	0	0	0	0	0	0	0	0	0	0
Cricotopus	L	0	0	0	0	0	0	0	191	2035	0	0	0	0	0	0	0	0	0	0
Synorthocladius	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pseudocricotopus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eukiefferiella	L	0	0	0	0	0	1018	0	0	0	0	0	0	0	0	0	0	0	0	0
Parametriocnemus	L	0	0	0	0	0	0	0	0	0	0	0	1018	0	0	509	0	0	0	0
Psectrocladius	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pseudosmittia	L	0	0	0	0	0	1018	0	32	2035	0	0	0	0	0	0	0	0	0	0
Simuliidae																				
Simulium	L	0	509	0	0	2035	1018	509	2480	1018	0	0	0	0	0	0	0	0	0	0
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Prosimulium	L	0	0	0	0	0	0	0	0	0	0	0	32	0	0	0	0	0	0	0
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	254	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ectemnia	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Athericidae																				
Atherix	L	0	0	0	0	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0
Ceratopogonidae																				
Culicoides	L	509	2544	0	509	509	0	0	127	3053	1018	1018	1018	1018	0	0	2035	0	32	64
Empididae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stratiomyidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tipulidae	L	0	0	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0
Muscidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tabanidae	L	0	0	0	0	0	32	0	0	32	0	0	0	0	0	0	32	0	0	0
TRICHOPTERA																				
Philopotamidae																				
Chimarra	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Psychomyiidae																				
Psychomia	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Polycentropidae																				
Polycentropus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydropsychidae																				
Hydropsyche	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Macronema	L	0	0	0	0	0	64	0	254	0	0	0	0	0	0	0	0	0	0	0
"	P	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Glossosmatidae																				
Glossosoma	L	0	0	0	0	0	0	0	32	2035	0	0	0	0	0	0	0	0	0	0
Brachycentridae																				
Brachycentrus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lepidostomatidae																				
Lepidostoma	L	0	0	0	0	0	0	509	286	0	0	0	0	0	0	0	1018	0	0	0

Table 32 cont'd

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
POST-TREATMENT SAMPLES - TREATMENT AREA
EXPERIMENT 3

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12	CORE 13	CORE 14	CORE 15	CORE 16	CORE 17	CORE 18	CORE 19
TRICHOPTERA cont'd																				
Limnephilidae																				
Neophylax	L	0	32	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Platycentropus	L	0	64	0	0	0	0	0	32	0	0	0	0	0	0	0	0	32	0	0
Hydatophylax	L	0	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydroptilidae																				
Oxyethira	L	0	0	0	0	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0
Molannidae																				
Molanna	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leptoceridae																				
Nectopsyche	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oecetis	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COLEOPTERA																				
Elmidae																				
Stenelmis	L	0	1526	0	0	0	0	509	541	0	0	32	509	0	0	0	0	0	763	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ODONATA																				
Aeshnidae																				
Aeshna	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cordullidae																				
Dorocordulia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Libellulidae																				
Libellula	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Orthemis	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cordulegastridae																				
Cordulegastor	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gomphidae																				
Omphiogomphus		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MISCELLANEOUS																				
Nematoda		509	2544	0	0	0	0	1018	763	1018	0	0	0	0	0	0	10208	0	254	1018
Oligochaeta		0	3593	0	64	0	2035	64	2321	0	2067	0	32	1018	32	32	1018	3593	1081	2162
Cyclopoida		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Harpacticoida		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ostracoda		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	254	0
Acarnina		0	509	0	509	0	0	0	95	0	0	0	0	0	0	0	0	0	0	0
Collembola		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leponis		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sphaerium		0	1018	0	1018	1018	1018	0	286	1018	1018	0	0	0	0	0	13229	509	7378	1018
Planorbis		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	254	0
Gordiidae		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	0	0
Hirudinea		0	0	0	0	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0
Hyallella		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aphidae		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 33. Summary of invertebrate drift density by taxonomic order from sites A4.5, A4.0 and A5.0 (reference areas) of acidification experiments 1,2 and 3.

LAKE 222 OUTFLOW DRIFT SAMPLES
(numbers per 100 cubic meters per day)

	EXPERIMENT 1									
	PRETREATMENT				REFERENCE					
	MAY 14	MAY 15	MEAN MAY 14-15	S.D.	MAY 16	MAY 17	MAY 18	MAY 19	MEAN MAY 16-19	S.D.
EPHEMEROPTERA	4.57	0.39	2.48	2.09	0.21	0.00	3.66	0.89	1.19	1.46
PLECOPTERA	0.05	0.00	0.02	0.02	8.40	0.84	0.00	0.95	2.55	3.40
DIPTERA	373.8	103.9	238.8	135.0	140.5	56.3	61.7	28.6	71.8	41.6
TRICHOPTERA	7.12	11.0	9.06	1.94	17.4	10.0	4.44	3.00	8.73	5.67
COLEOPTERA	0.05	1.57	0.81	0.76	0.00	0.84	3.60	0.00	1.11	1.48
HEMIPTERA	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.06	0.04	0.04
LEPIDOPTERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HYMENOPTERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PSOCOPTERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ODONATA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MISCELLANEOUS	822.8	396.1	609.4	213.3	240.5	102.8	200.9	28.5	143.2	83.1

	EXPERIMENT 2									
	PRETREATMENT				REFERENCE					
	MAY 18	MAY 19	MEAN MAY 18-19	S.D.	MAY 20	MAY 21	MAY 22	MAY 23	MEAN MAY 20-23	S.D.
EPHEMEROPTERA	7.91	10.80	9.35	1.44	8.36	11.8	6.98	0.11	6.82	4.25
PLECOPTERA	0.00	0.00	0.00	0.00	0.00	2.07	0.00	1.23	0.82	0.88
DIPTERA	135.8	176.5	156.2	20.4	173.0	556.6	284.5	279.1	323.3	141.8
TRICHOPTERA	19.0	33.4	26.2	7.20	16.5	27.6	15.5	18.5	19.5	4.77
COLEOPTERA	0.04	0.84	0.44	0.40	5.84	6.79	0.67	1.84	3.78	2.59
HEMIPTERA	0.70	0.04	0.37	0.33	0.06	0.12	0.00	0.04	0.06	0.04
LEPIDOPTERA	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.01	0.01
HYMENOPTERA	0.00	0.71	0.36	0.36	0.00	1.00	0.00	0.00	0.25	0.43
PSOCOPTERA	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.00	0.13	0.22
ODONATA	0.00	0.04	0.02	0.02	0.06	0.06	0.08	0.00	0.05	0.03
MISCELLANEOUS	168.9	78.3	123.6	45.3	77.1	101.7	49.1	61.4	72.3	19.7

Table 33 cont'd

LAKE 222 OUTFLOW DRIFT SAMPLES
(numbers per 100 cubic meters per day)

	EXPERIMENT 3									
	PRETREATMENT				REFERENCE					
	MAY 22	MAY 23	MEAN MAY 22-23	S.D.	MAY 24	MAY 25	MAY 26	MAY 27	MEAN MAY 24-27	S.D.
EPHEMEROPTERA	9.75	0.39	5.07	4.68	16.5	9.96	26.0	0.89	13.3	9.18
PLECOPTERA	2.26	0.00	1.13	1.13	0.07	2.72	3.02	0.95	1.69	1.22
DIPTERA	2966	103.9	1535	1431	4832	7562	6921	28.6	4836	2953
TRICHOPTERA	39.4	11.0	25.2	14.2	20.2	8.42	30.1	3.00	15.4	10.5
COLEOPTERA	0.71	1.62	1.16	0.46	4.01	2.98	15.6	0.00	5.66	5.95
HEMIPTERA	0.21	0.00	0.11	0.11	0.22	0.26	0.75	0.06	0.32	0.26
LEPIDOPTERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HYMENOPTERA	0.07	0.00	0.04	0.04	0.00	2.72	0.00	0.00	0.68	1.18
PSOCOPTERA	2.26	0.00	1.13	1.13	0.00	0.00	6.03	0.00	1.51	2.61
ODONATA	0.14	0.00	0.07	0.07	0.07	0.00	0.00	0.00	0.02	0.03
MISCELLANEOUS	327.5	396.1	361.8	34.3	293.0	256.3	196.3	28.5	193.5	101.3

Table 34. Summary of invertebrate drift density by taxonomic order from sites B4.5, B4.0 and B5.0 (treatment areas) of acidification experiments 1,2 and 3.

LAKE 222 OUTFLOW DRIFT SAMPLES
(numbers per 100 cubic meters per day)

	EXPERIMENT 1									
	PRETREATMENT				REFERENCE					
	MAY 14	MAY 15	MEAN MAY 14-15	S.D.	MAY 16	MAY 17	MAY 18	MAY 19	MEAN MAY 16-19	S.D.
EPHEMEROPTERA	2.70	11.6	7.17	4.47	77.1	49.5	15.5	0.00	35.5	29.9
PLECOPTERA	1.13	1.77	1.45	0.32	0.99	0.89	0.00	2.67	1.14	0.96
DIPTERA	108.8	177.5	143.1	34.4	312.9	87.8	62.4	70.3	133.4	104.1
TRICHOPTERA	6.97	18.6	12.8	5.79	10.1	42.4	8.50	8.45	17.3	14.5
COLEOPTERA	0.05	1.67	0.86	0.81	0.83	0.21	0.06	0.00	0.28	0.33
HEMIPTERA	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.01	0.02
LEPIDOPTERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HYMENOPTERA	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.01	0.02
PSOCOPTERA	1.57	1.57	1.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ODONATA	0.05	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00
MISCELLANEOUS	351.4	157.6	254.5	96.9	215.5	94.7	173.0	23.1	126.6	73.8

	EXPERIMENT 2									
	PRETREATMENT				REFERENCE					
	MAY 18	MAY 19	MEAN MAY 18-19	S.D.	MAY 20	MAY 21	MAY 22	MAY 23	MEAN MAY 20-23	S.D.
EPHEMEROPTERA	0.17	4.04	2.11	1.93	29.6	4.96	5.06	0.65	10.1	11.4
PLECOPTERA	0.70	0.00	0.35	0.35	0.57	1.30	0.00	0.00	0.47	0.53
DIPTERA	167.3	84.5	125.9	41.4	823.7	350.4	329.3	160.6	416.0	246.6
TRICHOPTERA	4.68	6.22	5.45	0.77	6.96	6.67	15.9	9.50	9.75	3.71
COLEOPTERA	0.79	1.60	1.19	0.41	0.64	0.00	1.26	0.00	0.47	0.52
HEMIPTERA	0.00	0.04	0.02	0.02	0.06	0.06	0.04	0.00	0.04	0.03
LEPIDOPTERA	0.70	0.00	0.35	0.35	0.03	0.00	0.00	0.00	0.01	0.01
HYMENOPTERA	0.00	0.00	0.00	0.00	0.00	0.59	0.00	0.00	0.15	0.26
PSOCOPTERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ODONATA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MISCELLANEOUS	33.6	21.8	27.7	5.90	24.1	27.5	18.8	14.7	21.3	4.90

Table 34 cont'd

LAKE 222 OUTFLOW DRIFT SAMPLES
(numbers per 100 cubic meters per day)

	EXPERIMENT 3									
	PRETREATMENT				REFERENCE					
	MAY 22	MAY 23	MEAN MAY 22-23	S.D.	MAY 24	MAY 25	MAY 26	MAY 27	MEAN MAY 24-27	S.D.
EPHEMEROPTERA	11.9	11.6	11.8	0.15	12.7	12.9	13.4	0.00	9.76	5.64
PLECOPTERA	6.76	1.77	4.27	2.51	0.00	0.00	0.00	2.67	0.67	1.16
DIPTERA	3382	177.5	1780	1602	2042	1166	3103	70.3	1595	1116
TRICHOPTERA	78.4	18.6	48.5	29.9	28.9	25.1	21.9	8.45	21.1	7.71
COLEOPTERA	9.11	1.67	5.39	3.72	2.84	1.70	15.4	0.00	4.98	6.08
HEMIPTERA	0.14	0.00	0.07	0.07	0.15	0.26	1.04	0.00	0.36	0.40
LEPIDOPTERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HYMENOPTERA	0.00	0.00	0.00	0.00	0.00	0.00	3.02	0.00	0.75	1.31
PSOCOPTERA	0.00	1.57	0.79	0.79	0.00	0.00	0.00	0.00	0.00	0.00
ODONATA	0.00	0.00	0.00	0.00	0.07	0.00	0.09	0.00	0.04	0.04
MISCELLANEOUS	468.2	157.6	312.9	155.3	249.8	246.9	291.7	23.1	202.9	105.3

Table 35. Summary of invertebrate drift density by taxonomic order from sites C4.5, C4.0 and C5.0 (treatment areas) of acidification experiments 1,2 and 3.

LAKE 222 OUTFLOW DRIFT SAMPLES
(numbers per 100 cubic meters per day)

	EXPERIMENT 1									
	PRETREATMENT				REFERENCE					
	MAY 14	MAY 15	MEAN MAY 14-15	S.D.	MAY 16	MAY 17	MAY 18	MAY 19	MEAN MAY 16-19	S.D.
EPHEMEROPTERA	1.55	4.45	3.00	1.45	90.8	46.5	7.71	2.02	36.8	35.6
PLECOPTERA	1.60	0.10	0.85	0.75	1.69	2.42	0.81	0.06	1.24	0.89
DIPTERA	83.4	328.1	205.7	122.3	632.6	141.7	125.1	195.2	273.7	208.9
TRICHOPTERA	7.01	14.8	10.9	3.92	30.3	11.4	7.15	11.4	15.1	8.99
COLEOPTERA	0.00	0.29	0.15	0.15	0.05	1.61	0.05	0.11	0.46	0.67
HEMIPTERA	0.00	0.00	0.00	0.00	0.05	0.00	0.05	0.00	0.03	0.03
LEPIDOPTERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HYMENOPTERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PSOCOPTERA	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.20	0.35
ODONATA	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.20	0.35
MISCELLANEOUS	141.7	155.2	148.5	6.79	130.3	58.1	44.8	41.4	68.7	36.1

	EXPERIMENT 2									
	PRETREATMENT				REFERENCE					
	MAY 18	MAY 19	MEAN MAY 18-19	S.D.	MAY 20	MAY 21	MAY 22	MAY 23	MEAN MAY 20-23	S.D.
EPHEMEROPTERA	1.84	0.00	0.92	0.92	86.4	12.0	7.38	1.74	26.9	34.6
PLECOPTERA	0.00	0.00	0.00	0.00	0.00	0.88	0.00	1.95	0.71	0.80
DIPTERA	119.2	36.3	77.8	41.5	829.6	616.3	371.0	298.9	529.0	209.7
TRICHOPTERA	4.39	1.96	3.18	1.21	25.4	12.0	20.5	7.93	16.5	6.88
COLEOPTERA	0.00	0.06	0.03	0.03	1.05	1.75	2.17	0.00	1.24	0.82
HEMIPTERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LEPIDOPTERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HYMENOPTERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PSOCOPTERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ODONATA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MISCELLANEOUS	37.6	7.18	22.4	15.2	60.9	46.7	23.5	13.9	36.2	18.6

Table 35 cont'd

LAKE 222 OUTFLOW DRIFT SAMPLES
(numbers per 100 cubic meters per day)

	EXPERIMENT 3									
	PRETREATMENT				REFERENCE					
	MAY 22	MAY 23	MEAN MAY 22-23	S.D.	MAY 24	MAY 25	MAY 26	MAY 27	MEAN MAY 24-27	S.D.
EPHEMEROPTERA	9.18	4.45	6.81	2.36	12.9	12.6	44.6	2.02	18.0	16.0
PLECOPTERA	4.38	0.10	2.24	2.14	0.00	1.36	0.00	0.06	0.35	0.58
DIPTERA	4292	328.1	2310	1982	1374	1387	8572	195.2	2882	3321
TRICHOPTERA	35.5	14.8	25.2	10.4	46.5	36.3	117.4	11.4	52.9	39.4
COLEOPTERA	8.31	0.29	4.80	4.51	2.55	12.6	26.0	0.11	10.3	10.2
HEMIPTERA	1.23	0.00	0.62	0.62	0.18	0.85	13.73	0.00	3.69	5.80
LEPIDOPTERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HYMENOPTERA	2.19	0.00	1.10	1.10	0.00	0.00	0.00	0.00	0.00	0.00
PSOCOPTERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ODONATA	0.00	0.00	0.00	0.00	0.09	0.09	7.32	0.00	1.87	3.14
MISCELLANEOUS	265.6	155.2	210.4	55.2	215.8	162.5	531.6	41.4	237.8	181.0

Table 36. Summary of invertebrate drift density by taxonomic order from sites D4.5, D4.0 and D5.0 (treatment areas) of acidification experiments 1,2 and 3.

LAKE 222 OUTFLOW DRIFT SAMPLES
(numbers per 100 cubic meters per day)

	EXPERIMENT 1									
	PRETREATMENT				REFERENCE					
	MAY 14	MAY 15	MEAN MAY 14-15	S.D.	MAY 16	MAY 17	MAY 18	MAY 19	MEAN MAY 16-19	S.D.
EPHEMEROPTERA	0.19	0.19	0.19	0.00	20.8	13.0	17.3	4.66	13.9	6.03
PLECOPTERA	0.97	0.00	0.48	0.48	0.87	0.91	0.00	0.62	0.60	0.36
DIPTERA	52.8	59.1	56.0	3.12	274.1	115.2	153.6	190.6	183.4	58.8
TRICHOPTERA	6.48	11.3	8.90	2.42	10.4	9.56	5.93	10.2	9.01	1.81
COLEOPTERA	0.00	0.05	0.02	0.02	0.05	0.05	0.00	1.01	0.28	0.42
HEMIPTERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LEPIDOPTERA	0.00	0.00	0.00	0.00	3.28	0.00	0.00	0.00	0.82	1.42
HYMENOPTERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PSOCOPTERA	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.20	0.35
ODONATA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MISCELLANEOUS	159.6	136.2	147.9	11.7	192.2	52.4	71.4	50.3	91.6	58.7

	EXPERIMENT 2									
	PRETREATMENT				REFERENCE					
	MAY 18	MAY 19	MEAN MAY 18-19	S.D.	MAY 20	MAY 21	MAY 22	MAY 23	MEAN MAY 20-23	S.D.
EPHEMEROPTERA	3.32	0.90	2.11	1.21	61.7	23.4	8.47	7.82	25.3	21.9
PLECOPTERA	0.00	0.95	0.48	0.48	4.31	3.56	0.43	0.00	2.08	1.89
DIPTERA	56.0	28.8	42.4	13.6	921.4	507.5	465.0	258.7	538.2	240.4
TRICHOPTERA	4.03	3.03	3.53	0.50	10.1	18.5	15.3	21.1	16.3	4.12
COLEOPTERA	3.27	0.00	1.63	1.63	0.00	3.51	1.74	5.65	2.72	2.09
HEMIPTERA	0.00	0.06	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00
LEPIDOPTERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HYMENOPTERA	0.00	0.00	0.00	0.00	2.09	0.00	0.87	0.00	0.74	0.86
PSOCOPTERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ODONATA	0.00	0.00	0.00	0.00	1.05	0.00	0.00	0.00	0.26	0.45
MISCELLANEOUS	182.4	28.7	105.5	76.8	121.3	106.4	46.5	39.5	78.4	35.9

Table 36 cont'd

LAKE 222 OUTFLOW DRIFT SAMPLES
(numbers per 100 cubic meters per day)

	EXPERIMENT 3									
	PRETREATMENT				REFERENCE					
	MAY 22	MAY 23	MEAN MAY 22-23	S.D.	MAY 24	MAY 25	MAY 26	MAY 27	MEAN MAY 24-27	S.D.
EPHEMEROPTERA	12.2	0.19	6.19	6.00	29.3	15.3	57.4	4.66	26.7	19.8
PLECOPTERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62	0.15	0.27
DIPTERA	496.7	59.1	277.9	218.8	1320	1100	2555	190.6	1292	843.7
TRICHOPTERA	27.1	11.3	19.2	7.87	22.5	10.1	40.4	10.2	20.8	12.4
COLEOPTERA	1.16	0.05	0.61	0.56	3.08	5.44	11.55	1.01	5.27	3.95
HEMIPTERA	0.00	0.00	0.00	0.00	0.00	0.09	0.23	0.00	0.08	0.09
LEPIDOPTERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HYMENOPTERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PSOCOPTERA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ODONATA	0.14	0.00	0.07	0.07	0.09	0.17	0.00	0.00	0.06	0.07
MISCELLANEOUS	85.7	136.2	110.9	25.3	131.1	71.0	51.7	50.3	76.0	32.8

Table 37. Detailed results of drift samples from sites A4.0, A4.5 and A5.0 (reference areas) of acidification experiments 1, 2 and 3 on Lake 222 outflow.

LAKE 222 OUTFLOW DRIFT SAMPLES BY TAXA
(numbers per 100 cubic meters per day)

		EXPERIMENT 1						EXPERIMENT 2						EXPERIMENT 3					
		PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE			
		MAY 14	MAY 15	MAY 16	MAY 17	MAY 18	MAY 19	MAY 18	MAY 19	MAY 20	MAY 21	MAY 22	MAY 23	MAY 22	MAY 23	MAY 24	MAY 25	MAY 26	MAY 27
EPHEMEROPTERA																			
Ephemerellidae																			
Ephemerella	N	0.83	0	0	0	0.90	0	0.70	0	0	2.01	0.71	0	4.59	0	3.50	2.72	0.09	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Heptageniidae																			
Stenonema	N	0	0	0	0	0	0	0	0	0	0.06	0	0	0.14	0	0	0	0	0
Baetidae																			
Baetis	N	0	0	0	0	2.76	0	0	2.84	1.02	0.94	0.04	0	0.07	0	4.66	0	6.03	0
Leptophlebiidae																			
Leptophlebia	N	3.34	0	0	0	0	0.89	7.17	7.86	7.34	8.09	6.16	0.11	4.73	0	8.16	4.17	16.5	0.89
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.15	2.98	3.39	0
Ephemeridae																			
Hexagenia	N	0.39	0.39	0.21	0	0	0	0.04	0.09	0	0.71	0.08	0	0.21	0.39	0.07	0.09	0	0
PLECOPTERA																			
Leuctridae																			
Leuctra	N	0	0	0	0	0	0.89	0	0	0	0	0	0.61	0	0	0	0	0	0.89
Nemouridae																			
Nemoura	N	0.05	0	3.34	0	0	0	0	0	0	2.01	0	0	2.26	0	0	2.72	3.02	0
"	A	0	0	3.39	0.84	0	0.06	0	0	0	0.06	0	0.61	0	0	0	0	0	0.06
Capnidae																			
Allocapnia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	1.67	0	0	0	0	0	0	0	0	0	0	0	0.07	0	0	0
Chloroperlidae	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIPTERA																			
Chironomidae																			
Pentaneurini	P	0	0	0	0	0	0.89	2.10	0	2.04	2.78	1.88	1.84	2.26	0	1.17	2.72	3.02	0.89
"	A	0	0	0	0.84	0	1.78	0.699	0	1.02	2.07	1.26	0	2.33	0	4.66	8.25	3.02	1.78
Paramerina	L	0	0	0	0	0	0	2.841	0	5.11	0	0	0	0	0	1.17	0	0	0
Thienemanniella	L	0	0	0	0	0	0	0	0	0	0.24	0	0	4.52	0	0	0	0	0
Ablabesmyia	L	0	1.67	1.72	0	1.80	0	12.63	4.309	11.2	9.15	3.14	8.66	13.6	1.67	7.14	2.72	24.1	0
Macropelopiini																			
Procladius	L	0	0	0.83	2.51	0	0	4.196	4.264	2.04	2.07	2.51	1.84	11.3	0	6.99	8.17	0	0
Natarsia	L	0	1.57	2.50	1.73	0	0	9.792	14.26	8.17	11.8	5.65	11.9	2.26	1.57	2.33	2.72	18.1	0
Chironomini	P	0	0	1.67	0	0	0	0	0	0	0.06	4.39	0.61	6.78	0	5.90	5.45	18.1	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	9.04	0	9.32	13.6	12.1	0
Paracladopelma	L	0	0	0	0	0	0	0	0	0	0	0.63	0	0	0	0	0	0	0
Pseudochironomus	L	0	0	0	0	0	0	0.70	0.04	0	0.12	0.63	0	0	0	0	0	0	0
Microtendipes	L	0	0	0	0	0	0	0	0	0	0.18	0	0	0	0	0	0	0	0
Tantytarsini	P	0	0	0	0	0	0	2.10	1.42	3.06	0	1.88	0	6.78	0	1.17	5.45	0	0
"	A	0	0	0	0	0	0	0	1.42	0	0	0	0	22.6	0	2.33	5.45	3.02	0
Tantytarsus	L	0	0	0	0	0	0	2.10	0	1.02	2.83	1.88	1.23	2.26	0	0	2.72	6.03	0
Rheotantytarsus	L	0	0	0	0	0	0	0	1.42	0	0.06	0	0	0	0	0	0	0	0

Table 37 cont'd

LAKE 222 OUTFLOW DRIFT SAMPLES BY TAXA
(numbers per 100 cubic meters per day)

		EXPERIMENT 1						EXPERIMENT 2						EXPERIMENT 3					
		PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE			
		MAY 14	MAY 15	MAY 16	MAY 17	MAY 18	MAY 19	MAY 18	MAY 19	MAY 20	MAY 21	MAY 22	MAY 23	MAY 22	MAY 23	MAY 24	MAY 25	MAY 26	MAY 27
DIPTERA cont'd																			
Chironomidae																			
Micropsecta	L	0.79	0	5.01	0.84	4.50	2.67	2.10	4.26	4.08	1.89	0.63	3.06	0	0	0	2.72	0	2.67
Corynoneurini	P	0	0	0	0.84	0.90	0	1.40	2.84	4.08	0	0	0	2.26	0	0	2.72	0	0
Thienemanniella	L	0	1.57	2.50	0	0.90	0	0.70	0	1.02	0.94	1.26	0	0	1.57	0	0	0	0
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Corynoneura	L	0	0	0	0	0	0	0	1.42	2.04	1.89	1.26	0	0	0	0	0	0	0
Orthocladiini	P	6.29	0.79	0	3.35	2.70	0	5.60	4.26	4.12	16.2	10.7	6.13	4.52	0.79	1.17	0	9.05	0
"	A	0	0.79	0	0	0.90	0	1.40	0	2.04	5.73	1.26	4.90	9.04	0.79	0	0	0	0
Cricotopus	L	3.83	3.14	3.34	0.84	0.90	2.67	4.90	5.69	2.07	5.02	3.14	1.84	4.52	3.14	3.50	2.72	18.1	2.67
Pseudocricotopus	L	0	0	0	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eukiefferiella	L	0	0	0	1.73	0.90	0.89	0.70	0	1.02	0.06	0	1.84	0	0	0	0	0	0.89
"	P	0	0	0	0	2.70	0	2.80	5.69	3.06	8.74	1.26	0.61	0	0	2.33	0	6.03	0
"	A	0	0	0	0	0.90	0	2.10	2.84	0	6.85	1.26	3.68	0	0	1.17	0	9.05	0
Parametriocnemus	L	0.05	0	0	0	0	0.89	0	1.42	0	0	0	0	0	0	0	0	12.1	0.89
Psectrocladius	L	0	0.79	0	0.84	0	0	1.40	0	1.02	0.06	0	0	2.26	0.79	0	0	0	0
Pseudosmittia	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rheocricotopus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Simuliidae																			
Simulium	L	51.1	48.9	81.0	27.6	34.9	12.6	44.7	87.8	74.6	351.6	173.9	154.5	2760	48.9	4715	7366	6486	12.6
"	P	0	0	0	0	0	0	0	0	0	2.18	0	0	0	0	0	0	18.1	0
Prosimulium	L	289.6	40.5	29.4	11.76	3.83	3.56	16.8	11.4	13.3	13.0	2.51	6.17	11.3	40.5	4.66	46.3	0	3.56
"	P	12.7	2.55	0.83	1.67	2.70	1.78	11.2	7.11	7.24	16.7	5.65	9.31	11.4	2.55	8.16	13.6	9.05	1.78
"	A	0	0	0	0	0	0	2.10	5.69	12.4	37.7	27.1	30.3	49.8	0	2.40	5.45	18.2	0
Ectemnia	L	4.71	0.64	6.68	0	1.29	0	0.74	6.04	1.02	53.3	27.0	25.7	22.6	0.64	46.6	59.9	244.3	0
"	P	0	0	0	0	0	0	0	0	0	0.94	0	0	0	0	0	0	0	0
Athericidae																			
Atherix	L	0	0	0.83	0	0	0	0	1.42	0	0	0	0	2.26	0	0	0	0	0
Ceratopogonidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Culicoides	L	0	0	0	0	0	0.89	0	0	2.04	0.94	0	1.23	2.26	0	4.66	2.72	3.02	0.89
Empididae	L	0	0.05	0	0	0	0	0	0	0	0.12	0	0	0.07	0.05	0	0	0	0
Stratiomyidae	L	0	0	0	0	0	0	0	1.42	0	0	0.04	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Syrphidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.07	0	0	0
Tipulidae	L	0.05	0.10	0	0	0	0	0	0	0.03	1.00	0	0.08	0	0.10	0	0	0	0
Limonia	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tabanidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chaoboridae																			
Chaoborus	L	0	0	0	0	0	0	0	0.04	0	0	0	0	0	0	0	0	0.09	0
Dixidae																			
Dixa	L	3.14	0.79	3.34	1.67	1.80	0	0	0	4.08	0.06	3.77	3.68	0	0.79	0	2.72	0	0
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 37 cont'd

LAKE 222 OUTFLOW DRIFT SAMPLES BY TAXA
(numbers per 100 cubic meters per day)

		EXPERIMENT 1						EXPERIMENT 2						EXPERIMENT 3					
		PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE			
		MAY 14	MAY 15	MAY 16	MAY 17	MAY 18	MAY 19	MAY 18	MAY 19	MAY 20	MAY 21	MAY 22	MAY 23	MAY 22	MAY 23	MAY 24	MAY 25	MAY 26	MAY 27
DIPTERA cont'd																			
Ptychopteridae																			
Bittacomorpha	L	0	0	0	0	0.06	0	0	0.04	0	0.24	0	0	0.07	0	0	0	0.09	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0.07	0	0	0	0	0
Mycetophilidae	A	1.57	0.05	0.84	0	0	0	0	0	0	0	0	0	0	0.05	0	0	0	0
Tachinidae	A	0	0	0	0	0	0	0	0	0.03	0	0	0	0	0	0	0	0	0
TRICHOPTERA																			
Philopotamidae																			
Chimarra	L	0	0	0	0	0	0	0.70	0	0	0.06	0	0	2.33	0	0	0	0	0
Psychomyiidae																			
Psychomia	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Polycentropidae																			
Polycentropus	L	0	0	0	0	0	0	0	0	0	0.12	0	0	0	0	0	0	0	0
Hydropsychidae																			
Hydropsyche	L	0	0	0	0	0	0	0	0	0	0	0	0	0.07	0	0	0	6.13	0
Macronema	L	0	0	0.05	0	0	0	0	0	0	0	0	0	2.54	0	0.22	0.26	0.28	0
Glossosomatidae																			
Glossosoma	L	2.36	0	0	0	0	0	1.40	2.84	0	1.95	1.26	2.45	2.26	0	1.17	0	0	0
Brachycentridae																			
Brachycentrus	L	0.83	0	4.17	0.84	0.11	0	2.84	10.1	3.13	2.07	1.29	0.65	4.66	0	3.57	0	0	0
Lepidostomatidae																			
Lepidostoma	L	1.57	8.64	10.0	5.02	3.66	2.67	8.39	5.69	8.20	5.96	6.28	9.81	4.52	8.64	3.50	2.72	15.1	2.67
Limnephilidae																			
Neophylax	L	0	0	0	0	0	0	0	0	0	2.72	0	0	13.63	0	7.72	1.62	0.57	0
Platycentropus	L	0	0	0	0	0	0	0	0.04	0.06	0.12	0.04	0.08	0.35	0	1.17	0.94	1.70	0
Pycnopsyche	L	0	0	0	0	0	0	0	0	0	0	1.26	0	0	0	0	0	0	0
Pseudostenophylax	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydatophylax	L	1.33	1.42	2.14	3.30	0.51	0.33	1.62	7.24	0.80	3.72	1.26	2.80	4.17	1.42	2.62	0.17	0	0.33
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydroptilidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oxyethira	L	0	0	0	0	0	0	0	0	2.04	0.94	0	0	4.52	0	0	2.72	0	0
Phyrganeidae																			
Ptilostomis	L	0	0	0	0	0	0	0.04	0.09	0	0.30	0.20	0.04	0.14	0	0.07	0	0.09	0
Molannidae																			
Molanna	L	0	0	0	0	0	0	0	0	0	0	1.26	0	0	0	0	0	0	0
Leptoceridae																			
Nectopsyche	L	1.03	0.93	1.04	0.89	0.17	0	4.02	6.00	1.28	9.62	2.63	0.23	0.07	0.93	0	0	0	0
Oecetis	L	0	0	0	0	0	0	0	1.42	1.02	0	0.04	2.45	0.14	0	0.15	0	6.22	0

Table 37 cont'd

LAKE 222 OUTFLOW DRIFT SAMPLES BY TAXA
(numbers per 100 cubic meters per day)

		EXPERIMENT 1						EXPERIMENT 2						EXPERIMENT 3					
		PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE			
		MAY 14	MAY 15	MAY 16	MAY 17	MAY 18	MAY 19	MAY 18	MAY 19	MAY 20	MAY 21	MAY 22	MAY 23	MAY 22	MAY 23	MAY 24	MAY 25	MAY 26	MAY 27
COLEOPTERA																			
Carabidae	A	0	0	0	0	0	0	0	0.04	0	1.06	0.04	0	0	0	0	0	0	0
Haliplidae																			
Haliplus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0.90	0	0	0	1.02	0.41	0	0	0.07	0	1.24	2.72	0	0
Dytiscidae																			
Dytiscus	L	0	0	0	0	0.90	0	0	0	0	0	0	0	0.07	0	2.33	0	0	0
"	A	0	0	0	0	0	0	0.04	0	0.19	0.18	0	0	0.07	0	0.22	0.09	0.19	0
Agabus	L	0	0	0	0	0	0	0	0	1.05	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0.09	0	0.06	0	0	0.14	0	0.07	0	0.28	0
Hydaticus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydroporus	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Agabetes	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0.07	0	0	0	0	0
Coymbetes	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0.06	0	0	0	0	0.07	0	0	0
Rhantus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydroscaphidae																			
Hydroscapha	A	0	0	0	0	0	0	0	0	1.02	1.95	0	0.61	0	0	0	0	3.02	0
Sperchopsis	A	0	0	0	0.84	0	0	0	0	0	0.94	0	0	0	0	0	0	0	0
Staphylinidae	A	0	0	0	0	0	0	0	0	0	0.06	0	0.61	0	0	0.07	0	0	0
Psephenidae																			
Psephenus	L	0	0	0	0	0	0	0	0	0	0.06	0	0	0	0	0	0	0	0
Dryopidae	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.05	0	0	0	0
Elmidae																			
Stenelmis	L	0.05	1.57	0	0	1.80	0	0	0	0	1.95	0.63	0.61	0.07	1.57	0	0	12.1	0
Lampyridae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gyrinidae																			
Gyrinus	A	0	0	0	0	0	0	0	0.71	2.04	0.06	0	0	0.21	0	0	0.17	0.09	0
Ptilodactylidae																			
Anchytarsus	L	0	0	0	0	0	0	0	0	0.51	0	0	0	0	0	0	0	0	0
Scarabaeidae																			
Cotinis	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEMIPTERA																			
Nepidae																			
Ranatra	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.09	0
Corixidae																			
Siegara	A	0	0	0	0	0	0	0	0.04	0	0	0	0.04	0.07	0	0	0	0.09	0
Gerridae																			
Rheumatobates	A	0	0	0	0	0	0	0	0	0	0.06	0	0	0	0	0	0	0	0

Table 37 cont'd

LAKE 222 OUTFLOW DRIFT SAMPLES BY TAXA
(numbers per 100 cubic meters per day)

		EXPERIMENT 1						EXPERIMENT 2						EXPERIMENT 3					
		PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE			
		MAY 14	MAY 15	MAY 16	MAY 17	MAY 18	MAY 19	MAY 18	MAY 19	MAY 20	MAY 21	MAY 22	MAY 23	MAY 22	MAY 23	MAY 24	MAY 25	MAY 26	MAY 27
HEMIPTERA cont'd																			
Notonectidae																			
Notonecta	A	0	0	0.10	0	0	0	0	0	0.06	0.06	0	0	0	0	0.15	0.09	0	0
Cercopidae	A	0	0	0	0	0	0.06	0.70	0	0	0	0	0	0	0	0	0	0	0.06
Vellidae																			
Rhagovelia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0.14	0	0.07	0.17	0.57	0
Pentatomidae	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LEPIDOPTERA																			
Pyralidae																			
Acentropus	L	0	0	0	0	0	0	0	0	0.03	0	0	0	0	0	0	0	0	0
HYMENOPTERA																			
Ichneumonoidea	A	0	0	0	0	0	0	0	0.71	0	0.94	0	0	0	0	0	0	0	0
Chalcidoidea	A	0	0	0	0	0	0	0	0	0	0.06	0	0	0	0	0	2.72	0	0
Formicidae	A	0	0	0	0	0	0	0	0	0	0	0	0	0.07	0	0	0	0	0
PSOCOPTERA																			
Trogiidae		0	0	0	0	0	0	0	0	0.51	0	0	0	2.26	0	0	0	6.03	0
ODONATA																			
Aeshnidae	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aeshna	N	0	0	0	0	0	0	0	0.04	0.06	0	0.08	0	0	0	0	0	0	0
Boyeria	N	0	0	0	0	0	0	0	0	0	0.06	0	0	0	0	0	0	0	0
Anax	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Libellulidae																			
Orthemis	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Macrothemis	N	0	0	0	0	0	0	0	0	0	0	0	0	0.07	0	0.07	0	0	0
Zygoptera	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Protoneuridae																			
Ischnura	N	0	0	0	0	0	0	0	0	0	0	0	0	0.07	0	0	0	0	0
Macromiidae																			
Macromia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 37 cont'd

LAKE 222 OUTFLOW DRIFT SAMPLES BY TAXA
(numbers per 100 cubic meters per day)

	EXPERIMENT 1						EXPERIMENT 2						EXPERIMENT 3					
	PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE			
	MAY 14	MAY 15	MAY 16	MAY 17	MAY 18	MAY 19	MAY 18	MAY 19	MAY 20	MAY 21	MAY 22	MAY 23	MAY 22	MAY 23	MAY 24	MAY 25	MAY 26	MAY 27
MISCELLANEOUS																		
Nematoda	0	0	0	0	0.96	0	1.40	0	3.10	4.07	1.29	0	2.26	0	3.50	0.09	6.03	0
Oligochaeta	0	0.05	0	0	0	0.89	0	0	0	0.18	1.26	1.30	0.07	0.05	1.17	0.09	0	0.89
Cyclopoida	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Harpacticoida	0	3.14	0.83	0	1.80	0	0	1.42	0	1.89	1.26	1.23	54.3	3.14	8.16	5.45	3.02	0
Ostracoda	0	0	1.67	0	0	0	0	0	1.02	0	0	0	0	0	0	0	0	0
Araneida	0	0	0	0	0	0	0.70	0	0.51	0.06	0	1.23	0	0	0	5.45	0	0
Acarnina	7.07	5.50	5.01	5.02	5.40	3.56	2.10	1.42	7.15	10.6	0	2.45	4.52	5.50	5.83	19.1	12.1	3.56
Collembola	811.8	387.4	229.6	91.9	192.7	24.0	139.9	49.8	45.9	68.6	40.8	48.4	176.4	387.4	199.4	182.4	102.5	24.0
Leponis	0	0	0	0.05	0	0	0.04	0	0	0	0	0	0.07	0	0	0	0.09	0
Chrosomus	0	0	0.05	0	0	0	0	0	0	0	0	0	0	0	0.07	0	0	0
Perca	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rana	0	0	0	0	0	0	0	0	0	0.06	0	0	0	0	0	0	0	0
Sphaerium	1.57	0	0	0	0.06	0	4.90	5.69	2.04	2.89	2.51	3.68	43.0	0	19.8	19.1	57.3	0
Planorbis	0	0	0	0	0	0	0	0	0	0	0	0.61	0	0	0.07	0	0	0
Physa	0.79	0	0	0	0	0	0	0	1.02	0	0	0	0	0	0	0	0	0
Gordiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.07	0	0	0
Hirudinea	0.79	0	0	0	0	0	0.74	0	0	1.00	0	0	0.07	0	0.07	0	0.09	0
Cladocera	0	0	1.67	5.86	0	0	0.70	0.09	1.02	0.94	0	0	2.26	0	8.16	0	0	0
Hyallella	0.83	0	1.67	0.05	0	0	18.5	19.9	15.3	11.5	1.96	2.45	44.6	0	46.8	24.8	15.3	0
Thysanoptera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Orconectes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aphidae	0	0.05	0	0	0	0	0	0	0	0	0	0	0	0.05	0	0	0	0
Ferrisia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ancyclus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gryllidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 38. Detailed results of drift samples from sites B4.5, B4.0 and B5.0 (treatment areas) of acidification experiments 1, 2 and 3 on Lake 222 outflow.

LAKE 222 OUTFLOW DRIFT SAMPLES BY TAXA
(numbers per 100 cubic meters per day)

		EXPERIMENT 1						EXPERIMENT 2						EXPERIMENT 3					
		PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE			
		MAY 14	MAY 15	MAY 16	MAY 17	MAY 18	MAY 19	MAY 18	MAY 19	MAY 20	MAY 21	MAY 22	MAY 23	MAY 22	MAY 23	MAY 24	MAY 25	MAY 26	MAY 27
EPHEMEROPTERA																			
Ephemerellidae																			
Ephemerella	N	0	1.57	0	1.67	0	0	0	0.71	2.55	1.00	1.26	0	2.26	1.57	0	1.36	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Heptageniidae																			
Stenonema	N	0	0.05	0	0	0	0	0	0	0	0	0	0.04	0	0.05	0	0	0.09	0
Baetidae																			
Baetis	N	1.62	5.50	77.1	47.5	14.6	0	0	0	24.0	2.54	0	0.61	2.26	5.50	2.33	0	6.03	0
Leptophlebiidae																			
Leptophlebia	N	1.08	3.78	0	0.16	0.96	0	0.17	3.33	3.06	1.42	3.80	0	7.35	3.78	10.1	11.6	6.60	0
"	A	0	0	0	0.16	0	0	0	0	0	0	0	0	0	0	0.07	0	0.66	0
Ephemeridae																			
Hexagenia	N	0	0.74	0	0	0	0	0	0	0	0	0	0	0.07	0.74	0.22	0	0	0
PLECOPTERA																			
Leuctridae																			
Leuctra	N	0	0	0.03	0.04	0	1.78	0	0	0	0	0	0	0	0	0	0	0	1.78
Nemouridae																			
Nemoura	N	0.15	1.62	0	0	0	0	0.70	0	0.03	1.06	0	0	6.78	1.62	0	0	0	0
"	A	0.98	0.10	0.16	0.05	0	0	0	0	0	0.06	0	0	0	0.10	0	0	0	0
Capnidae																			
Allocapnia	N	0	0	0	0	0	0	0	0	0.51	0	0	0	0	0	0	0	0	0
"	A	0	0.05	0	0	0	0.89	0	0	0.03	0.18	0	0	0	0.05	0	0	0	0.89
Chloroperlidae	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIPTERA																			
Chironomidae																			
Pentaneurini	P	0.79	0.05	0	0	0	0	0.70	0.71	0.51	2.01	0	0	6.78	0.05	0	1.36	0	0
"	A	0.79	0	0.05	0.84	0	0	0.70	1.42	0.10	0.12	0	0.61	0	0	2.33	0	3.02	0
Paraenerina	L	0	0	0	0	0	0	0	0	1.53	0.47	0	0	0	0	3.50	9.53	0.09	0
Thienemanniyia	L	0	0	0	0	0	0	0	0	0	0	0	0	9.04	0	0	0	0	0
Ablabesmyia	L	2.50	4.08	0	8.42	3.60	1.78	1.40	0.71	3.06	1.06	7.53	2.45	2.26	4.08	3.57	5.53	1.51	1.78
Macropelopiini																			
Procladius	L	1.57	0	0	5.07	0.90	4.45	0	1.42	1.02	1.12	0	0	15.8	0	0	4.08	1.51	4.45
Natarsia	L	2.41	3.98	0.89	0.89	0.96	2.67	1.40	0.76	1.09	10.2	13.8	7.97	2.26	3.98	2.33	1.45	12.1	2.67
Chironomini	P	0	0	0	0	0	0	0	0	0	4.31	0	0	0	0	1.17	0	1.51	0
"	A	0	0	0	0	0	0	0	0	0	2.42	0	0	0	0	0	2.72	1.51	0
Paracladopelma	L	0	0	0	0	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0
Pseudochironomus	L	0	0	0	0	0	0.89	0	0	0	0.47	0	0	0	0	0	0	0	0.89
Microtendipes	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tantytarsini	P	0	0	0	0	0	0	0.70	0	9.19	0	0	2.45	4.52	0	0	0	0	0
"	A	0.05	0	0	0	0	0	0	0	0	0	0	0	2.26	0	0	1.36	10.6	0
Tantytarsus	L	2.36	0	1.67	0	0	1.78	0	0.71	0.54	1.95	3.77	0.61	0	0	1.17	1.36	1.51	1.78
Rheotantytarsus	L	0	0	0	0	0	0	0	0.71	0	0.53	0	0	0	0	0	0	0	0

Table 38 cont'd

LAKE 222 OUTFLOW DRIFT SAMPLES BY TAXA
(numbers per 100 cubic meters per day)

		EXPERIMENT 1						EXPERIMENT 2						EXPERIMENT 3					
		PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE			
		MAY 14	MAY 15	MAY 16	MAY 17	MAY 18	MAY 19	MAY 18	MAY 19	MAY 20	MAY 21	MAY 22	MAY 23	MAY 22	MAY 23	MAY 24	MAY 25	MAY 26	MAY 27
DIPTERA cont'd																			
Chironomidae																			
Micropsecta	L	3.24	4.71	10.2	6.80	13.6	1.78	0.70	0.71	6.64	3.84	6.28	0.61	2.26	4.71	3.50	5.45	1.51	1.78
Corynoneurini	P	0	0	0	0	0	0	0	2.13	1.02	0.47	2.51	1.23	0	0	0	0	0	0
Thienemanniella	L	0	0	1.67	1.67	0.90	0	0.70	0.71	3.06	7.09	7.53	1.23	0	0	0	0	0	0
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Corynoneura	L	0	0	0	1.73	0	0	0.70	0	1.53	1.95	0	0.61	0	0	0	0	0	0
Orthocladiini	P	1.62	0	0.83	0	0	3.56	1.40	4.98	10.7	19.7	6.28	4.29	4.52	0	1.17	0	7.54	3.56
"	A	0	0	0	0	0	0	0.70	0.36	4.08	3.90	5.02	1.23	4.52	0	2.33	1.36	3.02	0
Cricotopus	L	4.32	8.64	7.57	6.70	3.60	0.89	2.80	2.13	12.9	8.50	7.57	2.45	11.3	8.64	3.50	5.45	12.1	0.89
Pseudocricotopus	L	0	0.79	0	0	0	0	0	0	0	0	0	0	0	0.79	0	0	0	0
Eukiefferiella	L	0	0	0.83	1.67	4.50	0	0	0	0	0	0	0.61	2.26	0	0	0	0	0
"	P	0.05	0	0	0.84	0	0	0	9.95	12.3	0	3.77	0	4.52	0	0	1.36	6.03	0
"	A	0	0	0	0	0	0	0	4.98	2.04	0.94	1.26	0.61	0	0	6.99	4.08	9.05	0
Parametriocnemus	L	0.88	0.79	0	0	0	1.78	0	0	0.51	1.89	1.26	0	0	0.79	0	1.36	0	1.78
Psectrocladius	L	0.15	0	0.05	0	0	0	0.70	0	0	1.48	0	0.61	0	0	0	0	0	0
Pseudosmittia	L	0	0	0	0.05	0	0	0	0	1.02	0.94	0	0	0	0	0	0	1.51	0
Rheocricotopus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Simuliidae																			
Simulium	L	54.6	97.6	178.4	37.7	32.5	46.3	47.6	25.5	548.6	175.3	173.5	93.2	3230	97.6	1908	1075	2980	46.3
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Prosimulium	L	19.1	31.6	66.9	12.0	0	3.61	94.5	13.0	101.7	27.6	23.9	4.90	4.66	31.6	16.3	2.72	0	3.61
"	P	6.87	0.10	1.77	1.73	0	0	6.99	7.82	42.5	23.7	30.3	9.23	9.47	0.10	7.14	2.72	1.51	0
"	A	0.10	0	0	0.05	0	0	0	3.55	18.5	9.98	18.9	11.6	20.2	0	63.1	27.6	1.51	0
Ectemnia	L	1.42	10.2	20.3	0	0	0	4.20	0.13	34.7	34.6	13.5	12.3	38.4	10.2	11.7	10.9	42.2	0
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Athericidae																			
Atherix	L	0	1.57	0.89	1.67	0.06	0	0	0.71	2.07	0.12	0.04	0.61	0	1.57	0	0	0	0
Ceratopogonidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Culicoides	L	2.36	1.57	0	0	0.90	0.89	0	0	2.55	1.89	1.26	0	4.52	1.57	3.50	1.36	1.60	0.89
Empididae	L	0	0	0	0	0	0	0	0	0	0.06	0	0	0	0	0	0	0	0
Stratiomyidae	L	0	0	0	0	0	0	0	0	0	0	0	0.61	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.51	0
Syrphidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tipulidae	L	0	0.10	0	0	0	0	0	0	0	0.06	0	0	0	0.10	0.07	0	0.28	0
Limonia	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tabanidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.15	0	0.09	0
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chaoboridae																			
Chaoborus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dixidae																			
Dixa	L	3.54	11.8	20.9	0	0	0	1.40	1.42	0.06	0.53	1.26	0.61	2.26	11.8	0	0	0	0
"	P	0	0	0	0	0	0	0	0	0	1.06	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0.12	0	0	0	0	0	0	0	0

Table 38 cont'd

LAKE 222 OUTFLOW DRIFT SAMPLES BY TAXA
(numbers per 100 cubic meters per day)

		EXPERIMENT 1						EXPERIMENT 2						EXPERIMENT 3					
		PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE			
		MAY 14	MAY 15	MAY 16	MAY 17	MAY 18	MAY 19	MAY 18	MAY 19	MAY 20	MAY 21	MAY 22	MAY 23	MAY 22	MAY 23	MAY 24	MAY 25	MAY 26	MAY 27
DIPTERA cont'd																			
Ptychopteridae																			
Bittacomorpha	L	0	0	0	0	0	0	0	0	0	0	0	0	0.07	0	0.07	0.09	0.09	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mycetophilidae	A	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tachinidae	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRICHOPTERA																			
Philopotamidae																			
Chimarra	L	0	0.79	0	0	0	0	0	0.71	0	0	0	0	15.8	0.79	2.40	0	1.51	0
Psychomyiidae																			
Psychomia	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.51	0
Polycentropidae																			
Polycentropus	L	0	0	0	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydropsychidae																			
Hydropsyche	L	0.79	0	0	0	0	0	0.70	0	0	0	2.51	0	2.33	0	0	2.81	1.51	0
Macronema	L	0	0	0.10	0	0	0	0	0.04	0.03	0	0	0.65	18.6	0	3.86	2.89	0.57	0
Glossomatidae																			
Glossosoma	L	0.10	3.19	0	8.37	0	0	0	0	0	0	0	0.61	6.85	3.19	2.33	1.36	6.03	0
Brachycentridae																			
Brachycentrus	L	0.20	4.22	6.78	6.85	1.80	0.95	1.40	1.42	0.61	1.95	3.77	1.26	2.33	4.22	3.50	2.89	0	0.95
Lepidostomatidae																			
Lepidostoma	L	3.44	7.07	1.67	24.2	3.66	5.34	1.40	1.42	4.08	3.07	7.53	4.29	20.3	7.07	9.32	2.72	6.13	5.34
Limnephilidae																			
Neophylax	L	0	0	0	0	0	0	0	0	0	0.71	0	0	7.06	0	2.77	2.04	0.47	0
Platycentropus	L	0	0	0	0	0	0	0	0	0	0	0.04	0	2.68	0	3.71	1.53	2.17	0
Pycnopsyche	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pseudostenophylax	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.07	0	0	0
Hydatophylax	L	0.88	0.98	0.83	1.31	1.13	0.33	0.35	1.55	0.86	0.83	0.31	2.57	0.07	0.98	0.66	2.89	0	0.33
"	P	0	0	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydroptilidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oxyethira	L	0	0	0	0	1.80	1.78	0	0	0	0	0	0	2.26	0	0	2.72	0	1.78
Phyrganeidae																			
Ptilostomis	L	0.05	0.05	0	0	0	0	0	0.09	0.03	0	0.04	0	0	0.05	0.15	0.43	0.19	0
Molannidae																			
Molanna	L	0	0	0	0	0	0	0	0	0	0.06	0	0	0	0	0	0	0	0
Leptoceridae																			
Nectopsyche	L	1.52	2.26	0.63	1.62	0.11	0.06	0.83	0.98	0.83	0.06	0.43	0.11	0	2.26	0.15	0	0	0.06
Oecetis	L	0	0	0	0	0	0	0	0	0.51	0	1.26	0	0.07	0	0	2.81	1.79	0

Table 38 cont'd

LAKE 222 OUTFLOW DRIFT SAMPLES BY TAXA
(numbers per 100 cubic meters per day)

		EXPERIMENT 1						EXPERIMENT 2						EXPERIMENT 3					
		PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE			
		MAY 14	MAY 15	MAY 16	MAY 17	MAY 18	MAY 19	MAY 18	MAY 19	MAY 20	MAY 21	MAY 22	MAY 23	MAY 22	MAY 23	MAY 24	MAY 25	MAY 26	MAY 27
COLEOPTERA																			
Carabidae	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.07	0	0.19	0
Haliplidae																			
Haliplus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.15	0	0	0
Dytiscidae																			
Dytiscus	L	0	0	0	0	0	0	0	0	0.54	0	0	0	2.26	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0.04	0	0	0	0	0	0	0.07	0.17	1.60	0
Agabus	L	0	0	0	0	0	0	0	0	0.03	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0.04	0	0	0	0	2.26	0	0.15	0.09	0	0
Hydaticus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydroporus	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Agabetes	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coymbetes	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rhantus	L	0	0	0	0	0	0	0	0.71	0	0	0	0	0	0	0	0	0	0
"	A	0	0.05	0	0	0	0	0	0	0	0	0	0	0	0.05	0	0	0	0
Hydroscaphidae																			
Hydroscapha	A	0	0	0	0	0	0	0	0.71	0.03	0	0	0	0	0	1.17	0.09	10.6	0
Sperchopsis	A	0	0	0	0.05	0	0	0.04	0.04	0	0	0	0	0.07	0	0	0	3.02	0
Staphylinidae	A	0	0	0	0.05	0	0	0	0	0	0	1.26	0	0	0	0	1.36	0	0
Psephenidae																			
Psephenus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dryopidae	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Elmidae																			
Stenelmis	L	0.05	1.62	0.83	0.10	0.06	0	0	0	0.03	0	0	0	4.52	1.62	0	0	0	0
Lampyridae	L	0	0	0	0	0	0	0	0.04	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gyrinidae																			
Gyrinus	A	0	0	0	0	0	0	0.74	0	0	0	0	0	0	0	1.24	0	0	0
Ptilodactylidae																			
Anchytarsus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scarabaeidae																			
Cotinis	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEMIPTERA																			
Nepidae																			
Ranatra	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Corixidae																			
Siegara	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.09	0
Gerridae																			
Rheumatobates	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 38 cont'd

LAKE 222 OUTFLOW DRIFT SAMPLES BY TAXA
(numbers per 100 cubic meters per day)

		EXPERIMENT 1						EXPERIMENT 2						EXPERIMENT 3					
		PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE			
		MAY 14	MAY 15	MAY 16	MAY 17	MAY 18	MAY 19	MAY 18	MAY 19	MAY 20	MAY 21	MAY 22	MAY 23	MAY 22	MAY 23	MAY 24	MAY 25	MAY 26	MAY 27
HEMIPTERA cont'd																			
Notonectidae																			
Notonecta	A	0	0	0	0	0	0	0	0	0	0	0	0	0.07	0	0	0	0.09	0
Corixidae	A	0	0	0	0	0	0	0	0	0	0.06	0	0	0	0	0	0	0	0
Veliidae																			
Rhagovelia	N	0	0	0	0	0	0	0	0	0.06	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0.04	0	0	0.04	0	0.07	0	0.15	0.26	0.85	0
Pentatomidae	A	0	0	0	0	0.06	0	0	0	0	0	0	0	0	0	0	0	0	0
LEPIDOPTERA																			
Pyralidae																			
Acentropus	L	0	0	0	0	0	0	0.70	0	0.03	0	0	0	0	0	0	0	0	0
HYMENOPTERA																			
Ichneumonoidea	A	0	0	0	0	0	0	0	0	0	0.06	0	0	0	0	0	0	0	0
Chalcidoidea	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.51	0
Formicidae	A	0	0	0.05	0	0	0	0	0	0	0.53	0	0	0	0	0	0	1.51	0
PSOCOPTERA																			
Trogiidae		1.57	1.57	0	0	0	0	0	0	0	0	0	0	0	1.57	0	0	0	0
ODONATA																			
Aeshnidae	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aeshna	N	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.09	0
Boyeria	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Anax	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Libellulidae																			
Orthemis	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Macrothemis	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Zygoptera	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Protoneuridae																			
Ischnura	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Macromiidae																			
Macromia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0

Table 38 cont'd

LAKE 222 OUTFLOW DRIFT SAMPLES BY TAXA
(numbers per 100 cubic meters per day)

	EXPERIMENT 1						EXPERIMENT 2						EXPERIMENT 3					
	PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE			
	MAY 14	MAY 15	MAY 16	MAY 17	MAY 18	MAY 19	MAY 18	MAY 19	MAY 20	MAY 21	MAY 22	MAY 23	MAY 22	MAY 23	MAY 24	MAY 25	MAY 26	MAY 27
MISCELLANEOUS																		
Nematoda	0.83	0	0.05	0	0	0.89	0	0	0	0	0	0	2.26	0	2.33	0	0.09	0.89
Oligochaeta	0.79	2.41	6.68	3.40	0.06	0	0	0.04	0	0	0	0	2.26	2.41	2.33	2.72	3.02	0
Cyclopoida	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Harpacticoida	0.79	1.57	0.83	0	0	0	0	0.71	0.5	0.5	0	0	18.1	1.57	4.66	0	0	0
Ostracoda	0	0	0	0	0	0	0	0	0	0	0	0	2.26	0	0	0	0	0
Araneida	0.05	0	0	0.836	0	0	0	0.04	0.6	0	1.3	0	0	0	0	0	0	0
Acarnina	1.62	5.55	15.0	10.0	2.70	0	1.40	2.18	1.02	2.13	5.02	1.23	6.78	5.55	15.1	21.8	33.2	0
Collembola	309.5	148.0	189.5	71.2	170.1	22.2	32.2	11.4	15.8	23.4	11.3	11.6	232.8	148.0	59.4	72.2	21.1	22.2
Lepomis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chrosomus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.09	0
Perca	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sphaerium	37.0	0	0	0	0	0	0	0	0.51	0.94	0	0.61	115.2	0	118.0	104.6	215.6	0
Planorbis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Physa	0	0	0	0	0.06	0	0	0	0	0	0	0.61	0	0	0	0	0	0
Gordiidae	0	0	0	0	0	0	0	0.04	0	0	0	0	0	0	0	0	0	0
Hirudinea	0	0.05	0.05	0	0	0	0	0	0	0.06	0	0	0	0.05	0.07	0.17	0.19	0
Cladocera	0	0	3.34	9.21	0	0	0	0	2.04	0	0	0	58.8	0	2.33	0	0	0
Hyallella	0.79	0.05	0	0	0	0	0.04	7.42	3.06	0.47	1.26	0	29.7	0.05	45.4	45.4	18.3	0
Thysanoptera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Orconectes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.07	0	0	0
Aphidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ferrisia	0	0	0	0	0	0	0	0	0.51	0	0	0.61	0	0	0	0	0	0
Ancyclus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gryllidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.09	0

Table 39. Detailed results of drift samples from sites C4.5, C4.0 and C5.0 (treatment areas) of acidification experiments 1, 2 and 3 on Lake 222 outflow.

LAKE 222 OUTFLOW DRIFT SAMPLES BY TAXA
(numbers per 100 cubic meters per day)

		EXPERIMENT 1						EXPERIMENT 2						EXPERIMENT 3					
		PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE			
		MAY 14	MAY 15	MAY 16	MAY 17	MAY 18	MAY 19	MAY 18	MAY 19	MAY 20	MAY 21	MAY 22	MAY 23	MAY 22	MAY 23	MAY 24	MAY 25	MAY 26	MAY 27
EPHEMEROPTERA																			
Ephemerellidae																			
Ephemerella	N	0.77	0	2.46	0	0.81	0	0.82	0	3.20	0.88	0	0	4.38	0	0	0	3.66	0
"	A	0	3.09	0	0	0	0	0	0	0	0	0	0	0	3.09	0	0	0	0
Heptageniidae																			
Stenonema	N	0	0	0	0	0	0	0	0	0	0.11	0	0	0	0	0	0	0	0
Baetidae																			
Baetis	N	0.77	0	88.2	46.3	6.89	0.95	0	0	81.6	8.88	3.47	0	4.38	0	1.41	5.44	14.6	0.95
Leptophlebiidae																			
Leptophlebia	N	0	0.53	0.15	0.15	0	1.07	1.02	0	1.57	2.14	3.91	1.74	0.21	0.53	10.0	7.14	26.3	1.07
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.41	0	0	0
Ephemeridae																			
Hexagenia	N	0	0.82	0	0	0	0	0	0	0	0	0	0	0.21	0.82	0.09	0	0	0
PLECOPTERA																			
Leuctridae																			
Leuctra	N	0	0	0	0	0	0	0	0	0	0.88	0	0	0	0	0	0	0	0
Nemouridae																			
Nemoura	N	1.60	0.05	1.69	0	0.81	0	0	0	0	0	0	0	4.38	0.05	0	1.36	0	0
"	A	0	0.05	0	2.42	0	0.06	0	0	0	0	0	1.95	0	0.05	0	0	0	0.06
Capnidae																			
Allocapnia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chloroperlidae	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIPTERA																			
Chironomidae																			
Pentaneurini	P	0	0	1.69	0	0	0.90	0	0	3.14	0	0	0.87	0	0	1.41	2.81	58.6	0.90
"	A	0	0.05	1.64	0	0	0.06	0	0	0	0	0	0	4.38	0.05	1.41	1.36	14.6	0.06
Paramerina	L	0	0	0	0	0	0	0	0	3.20	2.63	0	0	0	0	2.82	4.08	0	0
Thienemannimyia	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ablabesmyia	L	1.60	4.83	7.53	3.27	2.43	4.54	1.63	1.80	9.41	11.5	9.56	5.27	2.19	4.83	3.61	4.08	0	4.54
Macropelopiini																			
Procladius	L	0	0	4.31	1.76	0	4.60	0.82	0	5.23	1.75	4.34	0	8.77	0	4.23	2.72	29.3	4.60
Natarsia	L	0.77	3.24	3.33	0	5.68	3.59	2.45	2.69	11.6	22.9	13.0	18.2	0	3.24	4.23	2.72	29.4	3.59
Chironomini	P	0	0	0	0	0	0	0	0	0	0	0	0	8.77	0	0.70	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	6.57	0	1.41	2.72	3.66	0
Paracladopelma	L	0	0.15	0.05	0	0.81	0	0	0	0	0	0	0	0	0.15	0	0	0	0
Pseudochironomus	L	0	0	0	0	0	0.90	0	0	0	0	0	0	0	0	0	0	0	0.90
Microtendipes	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tantytarsini	P	0	0	0	0	0	0	0	0	3.14	1.75	0.43	0	2.19	0	0.70	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	6.57	0	1.41	4.08	0	0
Tantytarsus	L	0	0	0.87	2.42	2.43	5.39	1.63	0	7.32	13.2	9.12	3.47	0	0	4.23	1.36	40.3	5.39
Rheotantytarsus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 39 cont'd

LAKE 222 OUTFLOW DRIFT SAMPLES BY TAXA
(numbers per 100 cubic meters per day)

		EXPERIMENT 1						EXPERIMENT 2						EXPERIMENT 3			
		PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE			
		MAY 14	MAY 15	MAY 16	MAY 17	MAY 18	MAY 19	MAY 18	MAY 19	MAY 20	MAY 21	MAY 22	MAY 23	MAY 22	MAY 23	MAY 24	MAY 25	MAY 26	MAY 27
DIPTERA cont'd																			
Chironomidae																			
Micropsecta	L	4.64	4.64	3.33	0.81	10.7	14.4	7.35	4.49	9.41	12.3	8.306	5.211	4.38	4.64	8.46	5.44	54.9	14.4
Corynoneurini	P	0	0	4.92	0.86	0.81	0	0.82	0	3.14	0	0.434	0	0	0	0	1.36	0	0
Thienemanniella	L	0	0	4.10	0.81	2.43	4.54	0	0	19.9	13.3	18.67	3.474	0	0	0	0	0	4.54
"	P	0	0	0	0	0	0	0.82	0	0	0	0	0	0	0	0	0	0	0
Corynoneura	L	0	0	0	1.61	0	0.90	0	0	11.5	4.50	2.17	0	0	0	0	0	0	0.90
Orthocladiini	P	1.55	0	5.74	0.81	0	0.90	1.63	0.90	6.27	4.39	6.08	0.87	4.38	0	5.64	1.36	7.32	0.90
"	A	0	0	1.64	0	0	0	0	0	2.09	2.63	2.17	0	4.38	0	0.70	4.08	0	0
Cricotopus	L	3.87	20.4	11.8	4.03	3.30	7.29	0.82	0.90	12.5	15.9	3.53	4.34	4.38	20.35	2.82	6.80	7.32	7.29
Pseudocricotopus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eukiefferiella	L	0.77	0	3.33	0.81	2.48	0.90	0.82	0	0	4.39	4.34	0	0	0	0	0	0	0.90
"	P	0	0	0	0	0	0.90	0.82	3.59	7.32	3.51	5.21	1.74	0	0	0	1.36	0	0.90
"	A	0	0	0	0	0	0	0	0.90	0	2.63	0	0	6.57	0	2.11	5.44	0	0
Paramatriocnemus	L	0.77	0	0	0	0	0	0	0.90	2.09	0.88	0.87	0	0	0	0	0	7.32	0
Psectrocladius	L	0.82	0	0.15	0	0	0.06	0	0	0	1.75	0	0	0	0	0	1.36	0	0.06
Pseudosmittia	L	0	0	1.64	0	0	0.90	0.82	0	0	2.63	1.74	0.87	0	0	0	0	0	0.90
Rheocricotopus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Simuliidae																			
Simulium	L	31.0	182.9	406.8	92.0	65.3	112.3	72.7	14.4	469.6	379.8	201.9	198.1	4133	182.9	1289	1299	8060	112.3
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Prosimulium	L	24.2	81.5	110.4	18.6	14.2	8.13	12.3	3.59	94.3	38.9	29.1	6.95	6.57	81.5	0	2.72	0	8.13
"	P	6.43	3.67	13.9	4.18	7.50	11.3	4.08	1.29	27.4	25.9	11.7	5.21	4.52	3.67	3.61	2.72	0	11.3
"	A	0	0.05	0.05	0	0	1.80	1.63	0	4.18	3.51	5.27	6.95	55.4	0.05	24.6	17.9	32.9	1.80
Ectemnia	L	0	25.0	41.0	8.05	6.08	7.18	7.35	0	70.6	43.0	30.8	35.6	26.3	25.0	7.05	8.16	226.9	7.18
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Athericidae																			
Atherix	L	0	0	0	0.81	0.81	0	0	0	42.1	0.88	0.43	0.87	0	0	2.11	0	0	0
Ceratopogonidae	L	0	0	0.05	0	0	0	0	0	0	0	1.30	0	0	0	0	0	0	0
Culicoides	L	0.77	0.05	0	0.05	0	0	0.82	0.90	0	0	0.43	0.87	0	0.05	1.41	1.36	0	0
Empididae	L	0	0	0	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stratiomyidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Syrphidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tipulidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0.07	0	0	0	0	0
Limonia	L	0	0	0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tabanidae	L	0	0	0	0	0	0.06	0	0	0	0	0	0	0	0	0	0	0	0.06
"	P	0	0	0	0	0	0.06	0	0	0	0	0	0	0	0	0	0	0	0.06
Chaoboridae																			
Chaoborus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dixidae																			
Dixa	L	6.19	1.60	4.15	0.81	0.05	3.59	0	0	4.25	1.75	0	0	2.19	1.60	0.70	1.36	0	3.59
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 39 cont'd

LAKE 222 OUTFLOW DRIFT SAMPLES BY TAXA
(numbers per 100 cubic meters per day)

		EXPERIMENT 1						EXPERIMENT 2						EXPERIMENT 3					
		PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE			
		MAY 14	MAY 15	MAY 16	MAY 17	MAY 18	MAY 19	MAY 18	MAY 19	MAY 20	MAY 21	MAY 22	MAY 23	MAY 22	MAY 23	MAY 24	MAY 25	MAY 26	MAY 27
DIPTERA cont'd																			
Ptychopteridae																			
Bittacomorpha	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.18	0.09	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mycetophilidae	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tachinidae	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRICHOPTERA																			
Philopotamidae																			
Chimarra	L	0	0	0	0	0	0	0	0	0	0.88	0	0	4.38	0	1.41	1.36	11.0	0
Psychomyiidae																			
Psychomia	L	0	0	0	0	0	0.06	0	0	0	0	0	0	0	0	0	0	0	0.06
Polycentropidae																			
Polycentropus	L	0	0.05	0.10	0	0	0	0	0	0	0	0	0	0	0.05	0	0	0	0
Hydropsychidae																			
Hydropsyche	L	0	0.05	1.64	0	0	0.06	0	0	0	0.88	0.43	0	0	0.05	0	0	3.66	0.06
Macronema	L	0	0	0	0	0	0	0	0	0	0	0.43	0	9.18	0	14.8	8.76	7.78	0
Glossomatidae																			
Glossosoma	L	0	0.05	3.33	0	0	0	0	0	4.18	0.88	0.43	1.74	0	0.05	2.11	1.36	14.6	0
Brachycentridae																			
Brachycentrus	L	1.74	6.33	2.67	0.81	0.05	0.06	0.82	0	0.07	0	1.74	0.87	0.07	6.33	0.09	4.59	0.11	0.06
Lepidostomatidae																			
Lepidostoma	L	1.55	4.64	17.4	7.25	4.87	3.03	2.45	1.80	19.9	4.66	13.5	4.34	15.3	4.64	18.3	10.9	43.9	9.03
Limnephilidae																			
Neophylax	L	0	0	0	0	0	0	0	0	0	0	0	0	0.27	0	0.79	5.70	3.77	0
Platycentropus	L	0	0	0.05	0	0	0	0	0	0	0	0	0	1.44	0	2.38	2.04	10.2	0
Pycnopsyche	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pseudostenophylax	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydatophylax	L	0.24	0.87	1.33	2.21	1.17	1.85	0.26	0.11	0.20	0.16	0.11	0.05	2.53	0.87	1.85	0.26	0.23	1.85
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydroptilidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	1.05	3.51	3.47	0.87	0	0	0	0	0	0
Oxyethira	L	0	0	0	0	0.81	0	0	0	0	0	0	0	2.19	0	4.23	1.36	0	0
Phyrganeidae																			
Ptilostomis	L	0	0	0.05	0	0.05	0	0	0	0	0	0	0	0.07	0	0.44	0	0	0
Molannidae																			
Molanna	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leptoceridae																			
Nectopsyche	L	3.48	2.85	3.74	1.11	0.20	0.34	0.87	0.06	0	0.16	0.43	0.05	0	2.85	0	0	3.66	0.34
Oecetis	L	0	0	0	0	0	0	0	0	0	0.88	0	0	0.07	0	0.09	0	18.4	0

Table 39 cont'd

LAKE 222 OUTFLOW DRIFT SAMPLES BY TAXA
(numbers per 100 cubic meters per day)

		EXPERIMENT 1						EXPERIMENT 2						EXPERIMENT 3					
		PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE			
		MAY 14	MAY 15	MAY 16	MAY 17	MAY 18	MAY 19	MAY 18	MAY 19	MAY 20	MAY 21	MAY 22	MAY 23	MAY 22	MAY 23	MAY 24	MAY 25	MAY 26	MAY 27
COLEOPTERA																			
Carabidae	A	0	0	0	0	0	0	0	0	0	0	0	0	0.14	0	0.09	0.09	0	0
Haliplidae																			
Haliplus	L	0	0	0	0	0	0	0	0.06	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0.07	0	0	0	0	0
Dytiscidae																			
Dytiscus	L	0	0.05	0	0	0	0	0	0	0	0	0	0	0.07	0.05	0	0	0	0
"	A	0	0.05	0	0	0	0	0	0	0	0	0	0	0.14	0.05	0.09	0	0.11	0
Agabus	L	0	0.10	0	0	0	0	0	0	0	0	0	0	0	0.10	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.26	0	0.11	0
Hydaticus	L	0	0	0	0	0	0	0	0	0	0	1.74	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.09	0.11	0
Hydroporus	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.09	0	0
Agabetes	L	0	0.05	0	0	0	0	0	0	0	0	0	0	0	0.05	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0.07	0	0	0	0	0
Coymbetes	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rhantus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydroscaphidae																			
Hydroscapha	A	0	0	0	0	0	0	0	0	0	0	0	0	4.38	0	0	5.44	25.6	0
Sperchopsis	A	0	0	0.05	0	0	0	0	0	0	0	0	0	2.19	0	0	1.36	0	0
Staphylinidae	A	0	0	0	0	0	0	0	0	0	0	0	0	2.19	0	0	2.72	0	0
Psephenidae																			
Psephenus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dryopidae	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Elmidae																			
Stenelmis	L	0	0.05	0	1.61	0.05	0.06	0	0	1.05	1.75	0.43	0	0	0.05	2.11	2.72	0	0.06
Lampyridae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gyrinidae																			
Gyrinus	A	0	0	0	0	0	0.06	0	0	0	0	0	0	0.07	0	0	0	0	0.06
Ptilodactylidae																			
Anchytarsus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scarabaeidae																			
Cotinis	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.09	0	0
HEMIPTERA																			
Nepidae																			
Ranatra	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Corixidae																			
Sigara	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gerridae																			
Rheumatobates	A	0	0	0	0	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 39 cont'd

LAKE 222 OUTFLOW DRIFT SAMPLES BY TAXA
(numbers per 100 cubic meters per day)

		EXPERIMENT 1						EXPERIMENT 2						EXPERIMENT 3					
		PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE			
		MAY 14	MAY 15	MAY 16	MAY 17	MAY 18	MAY 19	MAY 18	MAY 19	MAY 20	MAY 21	MAY 22	MAY 23	MAY 22	MAY 23	MAY 24	MAY 25	MAY 26	MAY 27
HEMIPTERA cont'd																			
Notonectidae																			
Notonecta	A	0	0	0.05	0	0	0	0	0	0	0	0	0	0.07	0	0	0	0	0
Corcopidae	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11.0	0
Vellidae																			
Rhagovelia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	1.16	0	0.18	0.85	2.75	0
Pentatomidae	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LEPIDOPTERA																			
Pyralidae																			
Acentropus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HYMENOPTERA																			
Ichneumonoidea	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chalcidoidea	A	0	0	0	0	0	0	0	0	0	0	0	0	2.19	0	0	0	0	0
Formicidae	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PSOCOPTERA																			
Trogiidae		0	0	0	0.81	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ODONATA																			
Aeshnidae	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7.32	0
Aeshna	N	0	0	0	0	0.81	0	0	0	0	0	0	0	0	0	0.09	0	0	0
Boyeria	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Anax	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.09	0	0
Libellulidae																			
Orthemis	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Macrothemis	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Zygoptera	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Protoneuridae																			
Ischnura	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Macromiidae																			
Macromia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 39 cont'd

LAKE 222 OUTFLOW DRIFT SAMPLES BY TAXA
(numbers per 100 cubic meters per day)

	EXPERIMENT 1						EXPERIMENT 2						EXPERIMENT 3					
	PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE			
	MAY 14	MAY 15	MAY 16	MAY 17	MAY 18	MAY 19	MAY 18	MAY 19	MAY 20	MAY 21	MAY 22	MAY 23	MAY 22	MAY 23	MAY 24	MAY 25	MAY 26	MAY 27
MISCELLANEOUS																		
Nematoda	1.55	3.19	1.69	0	0.81	0	1.63	0.90	0.13	0	0	0.87	0	3.19	0	0	7.32	0
Oligochaeta	0.77	0.15	1.08	0.81	0	0	0.82	0.90	0	0	0.43	0	0	0.15	0	1.36	0	0
Cyclopoida	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Harpacticoida	0	0	2.46	0.81	1.62	0	0	0	2.09	0	0	0	11.0	0	2.11	4.08	0	0
Ostracoda	0	0	0.82	0	0	0	0	0	0	0	0	0	0	0	0	0	3.66	0
Araneida	0	0	0.82	0.86	0	0.06	0	0	0	0	0	0	0.07	0	0	1.36	0	0.06
Acarnina	2.32	4.64	14.8	4.83	2.48	3.59	3.27	0.90	7.32	3.51	0.43	0	30.7	4.64	12.0	13.6	84.2	3.59
Collembola	137.0	147.1	97.7	46.0	39.1	35.9	31.9	4.49	41.8	39.5	22.6	13.0	188.5	147.1	119.8	69.4	76.9	35.9
Lepomis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chrosomus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.18	0	0	0
Perca	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sphaerium	0	0	0	1.61	0	1.85	0	0	0	0	0	0	24.1	0	33.1	19.0	84.2	1.85
Planorbis	0	0	0	0	0.81	0	0	0	0	0	0	0	0	0	0	0	0	0
Physa	0	0	0	0	0	0	0	0	0	0	0	0	8.77	0	0	0	0	0
Gordiidae	0	0	0	0	0	0	0	0	0	0	0	0	0.07	0	0	0.09	0.11	0
Hirudinea	0	0	0.05	0	0	0	0	0	0.13	0.11	0	0	0.14	0	0.09	0.09	0.11	0
Cladocera	0	0	9.02	1.66	0	0	0	0	2.09	0	0	0	2.19	0	0	0	0	0
Hyallella	0	0.10	1.79	0.81	0	0	0	0	7.32	3.56	0	0	0.07	0.10	48.4	53.5	275.1	0
Thysanoptera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Orconectes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aphidae	0	0	0	0.81	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ferrisia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ancyclus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gryllidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.11	0

Table 40. Detailed results of drift samples from sites D4.5, D4.0 and D5.0 (treatment areas) of acidification experiments 1, 2 and 3 on Lake 222 outflow.

LAKE 222 OUTFLOW DRIFT SAMPLES BY TAXA
(numbers per 100 cubic meters per day)

		EXPERIMENT 1						EXPERIMENT 2						EXPERIMENT 3					
		PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE			
		MAY 14	MAY 15	MAY 16	MAY 17	MAY 18	MAY 19	MAY 18	MAY 19	MAY 20	MAY 21	MAY 22	MAY 23	MAY 22	MAY 23	MAY 24	MAY 25	MAY 26	MAY 27
EPHEMEROPTERA																			
Ephemerellidae																			
Ephemerella	N	0	0	0	0	0	0	0.82	0	1.05	0	0	0	1.23	0	4.67	2.89	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Heptageniidae																			
Stenonema	N	0	0	0	0	0	0	0	0	0	1.75	0	0	0	0	0	0	0.11	0
Baetidae																			
Baetis	N	0	0	18.0	13.0	15.6	3.59	2.50	0	59.6	14.2	6.95	0.43	0.07	0	1.41	5.44	43.9	3.59
Leptophlebiidae																			
Leptophlebia	N	0.19	0	2.77	0	1.67	1.07	0	0.90	1.05	7.40	1.52	7.38	10.8	0	22.9	6.63	13.2	1.07
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.11	0
Ephemeridae																			
Hexagenia	N	0	0.19	0	0	0	0	0	0	0	0	0	0	0.14	0.19	0.35	0.34	0.11	0
PLECOPTERA																			
Leuctridae																			
Leuctra	N	0	0	0.82	0.81	0	0	0	0.90	0	0	0.43	0	0	0	0	0	0	0
Nemouridae																			
Nemoura	N	0.19	0	0.05	0	0	0	0	0	0	0.88	0	0	0	0	0	0	0	0
"	A	0.77	0	0	0	0	0	0	0.06	2.09	1.75	0	0	0	0	0	0	0	0
Capnidae																			
Allocapnia	N	0	0	0	0	0	0	0	0	0	0.88	0	0	0	0	0	0	0	0
"	A	0	0	0	0.10	0	0.62	0	0	2.22	0.05	0	0	0	0	0	0	0	0.62
Chloroperlidae	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIPTERA																			
Chironomidae																			
Pentaneurini	P	0	0	0.10	0	0	0	0	0.90	3.14	2.63	1.74	0	3.29	0	1.41	0	11.0	0
"	A	0	0	0	0.81	2.43	0	0	1.80	2.09	0.93	0.49	0	2.19	0	1.41	2.72	7.32	0
Paraneurina	L	0	0	0	0	0	0	0	0	2.09	0.88	0	0	0	0	11.3	2.72	0.11	0
Thienemannimyia	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.82	0	0	0
Ablabesmyia	L	4.01	1.55	0.82	1.61	1.62	3.59	1.63	0	2.16	6.20	7.00	4.83	5.48	1.55	8.81	5.44	11.0	3.59
Macropelopiini																			
Procladius	L	0	0	4.92	1.61	0.05	2.69	0	0	3.14	3.56	2.66	7.82	4.38	0	4.23	2.72	14.6	2.69
Natarsia	L	0.82	0	0.82	2.42	7.30	1.80	0	0	6.27	36.9	26.7	15.9	9.86	0	25.4	8.25	40.3	1.80
Chironomini	P	0	0	0	0	0	0	0	0	0	0	0	0	7.67	0	4.23	2.72	3.66	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.23	2.72	0	0
Paracladopelma	L	0	0	0.36	0	0.05	0	0	0	0	0	0	0.05	1.10	0	0	0	0	0
Pseudochironomus	L	0	0	0.05	0	0	0	0	0	0	0.88	0	0	1.10	0	0	0	0	0
Microtendipes	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tantytarsini	P	0.77	0	0	0	0	0	0	0	4.18	0	0.43	0	3.29	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.82	0	3.66	0
Tantytarsus	L	0	0	0.05	0	4.87	4.49	0	0	6.27	25.6	15.4	9.56	3.29	0	14.1	5.44	18.3	4.49
Rheotantytarsus	L	0	0	0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 40 cont'd

LAKE 222 OUTFLOW DRIFT SAMPLES BY TAXA
(numbers per 100 cubic meters per day)

		EXPERIMENT 1						EXPERIMENT 2						EXPERIMENT 3					
		PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE			
		MAY 14	MAY 15	MAY 16	MAY 17	MAY 18	MAY 19	MAY 18	MAY 19	MAY 20	MAY 21	MAY 22	MAY 23	MAY 22	MAY 23	MAY 24	MAY 25	MAY 26	MAY 27
DIPTERA cont'd																			
Chironomidae																			
Micropsecta	L	0.77	1.55	14.8	5.64	12.2	10.8	4.08	2.69	7.32	20.3	9.12	13.9	1.10	1.55	15.5	2.72	43.9	10.8
Corynoneurini	P	0.77	0	0	0.81	0	0.90	0.82	0	0	1.75	1.74	0	0	0	2.82	5.44	3.66	0.90
Thienemanniella	L	0	0.77	0.82	4.83	6.54	4.49	0.82	0	9.41	21.1	10.9	6.08	2.19	0.77	0	2.72	3.66	4.49
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Corynoneura	L	0	0	0.82	1.61	1.62	2.69	0	0	3.14	6.14	0	0	2.19	0	0	0	3.66	2.69
Orthocladiini	P	0	0	0	1.61	1.67	0.90	2.45	0	4.18	0.88	2.61	2.61	18.7	0	18.0	2.72	3.66	0.90
"	A	0	0	0	0	0	0	0.82	0	3.14	3.51	5.65	6.08	2.19	0	18.3	2.72	22.0	0
Cricotopus	L	9.33	3.14	14.0	4.03	7.30	4.49	0.82	2.69	10.5	7.95	10.2	4.78	5.48	3.14	5.64	2.72	11.0	4.49
Pseudocricotopus	L	0	0.77	0	0	0	0	0	0	0	0	0	0	0	0.77	0	0	0	0
Eukiefferiella	L	0	0	1.64	0	4.11	2.69	0.82	0.90	0	7.02	4.78	2.61	0	0	0	0	0	2.69
"	P	0	0	0	0	2.43	0.90	2.45	0	11.5	2.63	0.87	0.43	2.19	0	12.7	24.5	40.3	0.90
"	A	0	0	0	0	0	0	0.82	0	1.05	1.75	0	1.74	2.19	0	11.3	5.44	0	0
Parametriocnemus	L	0	0	0	0	0	0	0	0.90	0	5.26	1.302	0	0	0	0	0	0	0
Psectrocladius	L	0.05	0.77	3.28	0	0	0	0	0	3.14	2.63	0	0	0	0.77	0	0	0	0
Pseudosmittia	L	0	0	0.82	0	0.81	0	0	0	0	0.88	3.91	0	0	0	0	0	0	0
Rheocricotopus	L	0	0.05	0	0	0	0	0	0	0	0	0	0	0	0.05	0	0	0	0
Simuliidae																			
Simulium	L	29.4	29.5	147.5	77.3	77.3	127.2	31.7	12.7	704.8	302.4	312.3	137.2	303.5	29.5	1078	974.3	2240	127.2
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Prosimulium	L	4.45	9.28	50.6	0.81	9.94	12.6	3.47	3.59	17.8	5.26	6.08	2.17	4.38	9.28	1.41	13.8	3.66	12.6
"	P	0.77	0.10	7.79	0	0.91	0.95	2.45	1.80	0	0.88	0.43	0	9.86	0.10	11.4	5.53	3.66	0.95
"	A	0	0	0	0	0	0	0	0	2.09	3.51	0.87	6.51	47.3	0	45.5	5.53	7.43	0
Ectemnia	L	0	0	11.5	4.83	6.79	7.57	1.17	0	112.9	30.7	38.7	32.1	47.1	0	11.3	5.44	51.2	7.57
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Athericidae																			
Atherix	L	0	0	0.05	0	0	0	0	0	0	0	0	0	0	0	1.41	2.72	0	0
Ceratopogonidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.72	0	0
Culicoides	L	0	0	0	0	0.81	0.90	0	0.90	1.05	0	0	1.30	0	0	0.09	0	7.32	0.90
Empididae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stratiomyidae	L	0	0	0.10	0	0	0	0	0	0	0	0	0	0.07	0	0.09	0.09	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Syrphidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tipulidae	L	0	0	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0.46	0
Limonia	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tabanidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.09	0	0	0
"	P	0	0	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chaoboridae																			
Chaoborus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dixidae																			
Dixa	L	1.69	11.6	13.2	7.30	4.87	0.90	1.63	0	0	5.26	1.30	3.04	6.57	11.6	5.64	5.44	0	0.90
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 40 cont'd

LAKE 222 OUTFLOW DRIFT SAMPLES BY TAXA
(numbers per 100 cubic meters per day)

		EXPERIMENT 1						EXPERIMENT 2						EXPERIMENT 3					
		PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE			
		MAY 14	MAY 15	MAY 16	MAY 17	MAY 18	MAY 19	MAY 18	MAY 19	MAY 20	MAY 21	MAY 22	MAY 23	MAY 22	MAY 23	MAY 24	MAY 25	MAY 26	MAY 27
DIPTERA cont'd																			
Ptychopteridae																			
Bittacomorpha	L	0	0	0	0	0	0	0.05	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mycetophilidae	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.72	0	0
Tachinidae	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRICHOPTERA																			
Philopotamidae																			
Chimarra	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.09	0	0	0
Psychomyiidae																			
Psychomia	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Polycentropidae																			
Polycentropus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydropsychidae																			
Hydropsyche	L	0	0	0	0	0	0	0	0	1.05	0	0	0.43	0	0	0	0	0	0
Macronema	L	0	0	0	0.05	0	0.06	0	0	0	0	0	0	0	0	0.09	0	0.34	0.06
Glossosomatidae																			
Glossosoma	L	0	0	0	0.81	0	0	0	0	2.09	0.88	2.61	4.34	2.19	0	0.09	2.72	3.66	0
Brachycentridae																			
Brachycentrus	L	0.97	2.32	1.69	1.66	0	0	0.10	0	0.07	0.99	0.49	0.87	2.26	2.32	2.99	2.72	3.66	0
Lepidostomatidae																			
Lepidostoma	L	3.09	7.74	2.46	4.03	4.06	6.28	3.32	2.69	6.27	9.65	7.38	15.2	11.0	7.74	7.05	2.72	25.6	6.28
Limnephilidae																			
Neophylax	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.81	0.17	0.11	0
Platycentropus	L	0	0	0	0	0	0	0	0	0	0	0	0	0.07	0	2.91	1.70	2.97	0
Pycnopsyche	L	0	0	0	0	0	0	0	0	0	0	0	0	2.19	0	0	0	0	0
Pseudostenophylax	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydatophylax	L	0.48	0.34	5.18	1.96	0.96	1.80	0.46	0.34	0.52	1.65	1.30	0.16	2.19	0.34	0.70	0	0.23	1.80
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydroptilidae	L	0	0	0	0	0.81	0	0	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	3.51	1.30	0	0	0	0	0	0	0
Oxyethira	L	0	0	0	0.81	0	0.90	0	0	0	0	0	0	0	0	2.82	0	0	0.90
Phyrganeidae																			
Ptilostomis	L	0	0.05	0	0	0	0	0	0	0	0	0	0	0.34	0.05	0	0	0	0
Molannidae																			
Molanna	L	0	0	0	0	0	0	0	0	0	0	0	0	2.19	0	0	0	0	0
Leptoceridae																			
Nectopsyche	L	1.93	0.87	1.03	0.25	0.10	1.18	0.15	0	0.07	1.86	2.23	0.11	4.59	0.87	0	0	0	1.18
Oecetis	L	0	0	0	0	0	0	0	0	0	0	0	0	0.07	0	0	0.09	3.77	0

Table 40 cont'd

LAKE 222 OUTFLOW DRIFT SAMPLES BY TAXA
(numbers per 100 cubic meters per day)

		EXPERIMENT 1						EXPERIMENT 2						EXPERIMENT 3					
		PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE			
		MAY 14	MAY 15	MAY 16	MAY 17	MAY 18	MAY 19	MAY 18	MAY 19	MAY 20	MAY 21	MAY 22	MAY 23	MAY 22	MAY 23	MAY 24	MAY 25	MAY 26	MAY 27
COLEOPTERA																			
Carabidae	A	0	0	0	0.05	0	0	0	0	0	0	0	0	0.07	0	0.09	0	0.34	0
Haliplidae																			
Haliplus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0.82	0	0	0	0	1.74	0	0	0	0	0	0
Dytiscidae																			
Dytiscus	L	0	0	0	0	0	0	0.82	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.18	0	0.11	0
Agabus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.11	0
Hydaticus	L	0	0	0	0	0	0	0	0	0	0	0	3.47	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydroporus	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Agabetes	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coymbetes	L	0	0.05	0	0	0	0	0	0	0	0	0	0	0	0.05	0	0	0	0
"	A	0	0	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rhantus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydroscaphidae																			
Hydroscapha	A	0	0	0	0	0	0.06	0	0	0	0	0	0.43	0	0	0	2.72	11.0	0.06
Sperchopsis	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Staphylinidae	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Psephenidae																			
Psephenus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dryopidae	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Elmidae																			
Stenelmis	L	0	0	0	0	0	0.90	1.63	0	0	2.63	1.74	0	1.10	0	2.82	2.72	0	0.90
Lampyridae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gyrinidae																			
Gyrinus	A	0	0	0	0	0	0.06	0	0	0	0.88	0	0	0	0	0	0	0	0.06
Ptilodactylidae																			
Anchytarsus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scarabaeidae																			
Cotinis	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEMIPTERA																			
Nepidae																			
Ranatra	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Corixidae																			
Sigara	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gerridae																			
Rheumatobates	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 40 cont'd

LAKE 222 OUTFLOW DRIFT SAMPLES BY TAXA
(numbers per 100 cubic meters per day)

		EXPERIMENT 1						EXPERIMENT 2						EXPERIMENT 3					
		PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE			
		MAY 14	MAY 15	MAY 16	MAY 17	MAY 18	MAY 19	MAY 18	MAY 19	MAY 20	MAY 21	MAY 22	MAY 23	MAY 22	MAY 23	MAY 24	MAY 25	MAY 26	MAY 27
HEMIPTERA cont'd																			
Notonectidae																			
Notonecta	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.11	0
Corixidae	A	0	0	0	0	0	0	0	0.06	0	0	0	0	0	0	0	0	0	0
Veliidae																			
Rhagovelia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.09	0.11	0
Pentatomidae	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LEPIDOPTERA																			
Pyralidae																			
Acentropus	L	0	0	3.28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HYMENOPTERA																			
Ichneumonoidea	A	0	0	0	0	0	0	0	0	0	0	0.87	0	0	0	0	0	0	0
Chalcidoidea	A	0	0	0	0	0	0	0	0	2.09	0	0	0	0	0	0	0	0	0
Formicidae	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PSOCOPTERA																			
Trogiidae		0	0	0	0	0.81	0	0	0	0	0	0	0	0	0	0	0	0	0
ODONATA																			
Aeshnidae	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aeshna	N	0	0	0	0	0	0	0	0	1.05	0	0	0	0.14	0	0.09	0	0	0
Boyeria	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Anax	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.09	0	0
Libellulidae																			
Orthemis	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Macrothemis	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.09	0	0
Zygoptera	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Protoneuridae																			
Ischnura	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Macromiidae																			
Macromia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 46 , cont'd

LAKE 222 OUTFLOW DRIFT SAMPLES BY TAXA
(numbers per 100 cubic meters per day)

	EXPERIMENT 1						EXPERIMENT 2						EXPERIMENT 3					
	PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE				PRETREATMENT		REFERENCE			
	MAY 14	MAY 15	MAY 16	MAY 17	MAY 18	MAY 19	MAY 18	MAY 19	MAY 20	MAY 21	MAY 22	MAY 23	MAY 22	MAY 23	MAY 24	MAY 25	MAY 26	MAY 27
MISCELLANEOUS																		
Nematoda	3.09	0	4.10	1.61	0	0	0.87	0	1.05	0	1.74	0	2.26	0	0	0	0	0
Oligochaeta	0.05	0.82	7.53	1.61	0.05	0.06	0	0.90	2.09	0.88	0.43	0.43	2.19	0.82	1.41	0	14.64	0.06
Cyclopoida	0	0	0	0	0	0	0	0	0	0.88	0	0	0	0	0	0	0	0
Harpacticoida	0	0	0	0.81	0	0.90	1.63	0	0	0.88	1.74	0	2.19	0	0	0	0	0.90
Ostracoda	0	0	0	0	0	0.90	0	0	0	0	0	0	0	0	0	0	0	0.90
Araneida	0	0	0	0	0	0	0	0	0	0.88	0	0	0	0	0	0	0	0
Acarnina	0.82	0.77	9.89	4.03	0.81	5.39	4.80	3.59	6.27	7.02	3.47	0	0	0.77	2.82	0	0	0
Collembola	153.9	134.6	162.4	42.7	67.3	43.1	174.9	24.2	110.8	63.2	36.5	35.2	71.2	134.6	86.1	43.5	22.0	43.1
Lepomis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chrosomus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.09	0	0	0
Perca	0	0	0	0	0	0	0	0	0	0.05	0	0	0	0	0	0	0	0
Rana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sphaerium	0	0	0.82	0	0.81	0	0.05	0	0	0	0	0.43	4.38	0	8.46	8.16	0	0
Planorbis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Physa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gordiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hirudinea	0.10	0	0	0	0	0	0	0	0	0.11	0	0	0	0	2.91	0	0.34	0
Cladocera	1.55	0	0.82	0.81	0.81	0	0	0	0	0	0	0	0	0	0	0	0	0
Hyallella	0	0	5.74	0.81	1.62	0	0	0	1.05	32.6	2.61	3.47	3.42	0	26.5	13.7	7.32	0
Thysanoptera	0	0	0.82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Orconectes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aphidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ferrisia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ancyclus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gryllidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 41. Summary of benthic samples by taxonomic order from Lake 223 outflow.

SUMMARY OF BENTHIC ORGANISMS BY TAXONOMIC ORDER
(numbers per square metre)
LAKE 223 OUTFLOW

TAXONOMIC ORDER	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12
EPHEMEROPTERA	0	0	0	0	0	0	0	0	0	0	0	32
PLECOPTERA	0	0	0	0	0	0	0	0	0	0	0	0
DIPTERA	4070	33199	9190	1081	11257	2798	2544	2926	53519	34090	2544	12784
TRICHOPTERA	668	1844	32	0	1208	95	223	223	2862	4102	159	1654
COLEOPTERA	0	0	0	0	0	0	0	0	509	0	0	0
ODONATA	0	0	32	0	32	0	0	0	0	32	32	0
MISCELLANEOUS	1049	4484	4070	1177	3085	0	1685	509	1526	509	1590	541

TAXONOMIC ORDER	CORE 13	CORE 14	CORE 15	MEAN CORES 1-15	S.D. CORES 1-15
EPHEMEROPTERA	0	0	0	2	8
PLECOPTERA	0	0	0	0	0
DIPTERA	509	9222	5692	12362	15002
TRICHOPTERA	0	0	0	871	1206
COLEOPTERA	0	0	0	34	127
ODONATA	0	0	32	11	15
MISCELLANEOUS	1526	3148	1049	1730	1307

Table 42. Summary of benthic samples by taxonomic order from Lake 224 outflow.

SUMMARY OF BENTHIC ORGANISMS BY TAXONOMIC ORDER
(numbers per square metre)
LAKE 224 OUTFLOW

TAXONOMIC ORDER	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	MEAN CORES 1-11	S.D.
EPHEMEROPTERA	0	0	0	0	0	0	0	0	0	0	0	0	0
PLECOPTERA	0	0	0	0	0	0	0	0	0	0	0	0	0
DIPTERA	26458	6106	29574	9190	1018	9349	54124	46714	11957	31641	15264	21945	16449
TRICHOPTERA	32	0	0	0	0	32	32	95	0	0	0	17	28
COLEOPTERA	0	0	0	0	0	0	0	0	0	0	0	0	0
ODONATA	0	0	0	0	0	0	32	0	0	0	0	3	9
MISCELLANEOUS	5120	4134	3053	7123	11194	14246	5088	32	1526	3085	572	5016	4188

Table 43. Detailed results of benthic samples from the outflow of Lake 223.

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
LAKE 223 OUTFLOW

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12	CORE 13	CORE 14	CORE 15
EPHEMEROPTERA																
Siphlonuridae																
Ameletus	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ephemerellidae																
Ephemerella	N	0	0	0	0	0	0	0	0	0	0	0	32	0	0	0
Heptageniidae																
Stenonema	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Baetidae																
Baetis	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leptophlebiidae																
Leptophlebia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ephemeridae																
Hexagenia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PLECOPTERA																
Leuctridae																
Leuctra	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nemouridae																
Nemoura	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capnidae																
Allocapnia	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIPTERA																
Chironomidae																
Pentaneurini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paramerina	L	0	0	0	0	0	0	0	0	0	0	0	0	0	1018	0
Ablabesmyia	L	0	0	0	0	0	0	0	0	509	0	0	509	0	0	509
Macropelopiini																
Procladius	L	0	509	2035	0	1018	127	1018	127	1018	509	1018	541	0	1018	0
Natarsia	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chironomini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Polypedilum	L	0	0	1018	0	0	0	0	0	0	0	0	0	0	0	0
Chironomus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paracladopelma	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pseudochironomus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Microtendipes	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tanytarsini	P	0	32	0	0	1018	0	0	127	509	509	0	0	0	0	0
Tanytarsus	L	1018	0	1018	32	2035	382	0	382	0	1018	1018	1526	509	1018	1018
Rheotanytarsus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Micropsecta	L	0	509	0	0	0	0	0	0	0	0	0	0	0	0	0
Corynoneurini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thienemanniella	L	0	0	0	0	0	127	0	0	0	0	0	0	0	0	0
Corynoneura	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 43 cont'd

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
LAKE 223 OUTFLOW

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12	CORE 13	CORE 14	CORE 15
DIPTERA cont'd																
Chironomidae																
Orthocladiini	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cricotopus	L	509	0	0	509	0	127	0	509	0	1526	0	2035	0	2035	0
Synorthocladius	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pseudocricotopus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eukiefferiella	L	0	0	0	0	0	0	0	254	0	0	0	0	0	0	0
Parametriocnemus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Psectrocladius	L	0	0	0	0	0	0	0	0	509	0	0	0	0	0	2035
Pseudosmittia	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Simuliidae																
Simulium	L	2035	30528	3053	509	7123	1908	1526	1272	50467	30528	509	8141	0	3053	2131
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Prosimulium	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0
Ectemnia	L	0	1622	0	0	0	0	0	0	0	0	0	0	0	0	0
Athericidae																
Atherix	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ceratopogonidae																
Culicoides	L	509	0	2035	0	0	127	0	0	509	0	0	0	0	1018	0
Empididae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stratiomyidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tipulidae	L	0	0	0	0	0	0	0	0	0	0	0	0	0	64	0
Muscidae	L	0	0	0	0	0	0	0	127	0	0	0	0	0	0	0
Tabanidae	L	0	0	32	0	64	0	0	127	0	0	0	32	0	0	0
TRICHOPTERA																
Philopotamidae																
Chimarra	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Psychomyiidae																
Psychomia	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Polycentropidae																
Polycentropus	L	0	0	0	0	0	0	0	0	0	4070	0	0	0	0	0
"	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydropsychidae																
Hydropsyche	L	0	0	0	0	0	0	0	0	541	32	0	0	0	0	0
Macronema	L	668	1844	32	0	1145	32	223	191	2321	0	159	1622	0	0	0
"	P	0	0	0	0	32	64	0	32	0	0	0	32	0	0	0
Glossosmatidae																
Glossosoma	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brachycentridae																
Brachycentrus	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lepidostomatidae																
Lepidostoma	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 43 cont'd

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
LAKE 223 OUTFLOW

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11	CORE 12	CORE 13	CORE 14	CORE 15
TRICHOPTERA cont'd																
Limnephilidae																
Neophylax	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Platycentropus	L	0	0	0	0	32	0	0	0	0	0	0	0	0	0	0
Hydatophylax	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydroptilidae																
Oxyethira	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Molannidae																
Molanna	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leptoceridae																
Nectopsyche	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oecetis	L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COLEOPTERA																
Elmidae																
Stenelmis	L	0	0	0	0	0	0	0	0	509	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ODONATA																
Aeshnidae																
Aeshna	N	0	0	0	0	0	0	0	0	0	0	32	0	0	0	0
Orthemis	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dorocordulia	N	0	0	32	0	32	0	0	0	0	32	0	0	0	0	0
Libellulidae																
Libellula	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cordulegastridae																
Cordulegastor	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Omphiogomphus		0	0	0	0	0	0	0	0	0	0	0	0	0	0	32
MISCELLANEOUS																
Nematoda		1018	509	3053	32	1018	0	1018	254	1526	509	0	0	509	2035	0
Oligochaeta		32	3975	0	1145	1049	0	668	254	0	0	1081	541	509	1113	1049
Cyclopoida		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Harpacticoida		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ostracoda		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acarnina		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Collembola		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lepomis		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sphaerium		0	0	1018	0	1018	0	0	0	0	0	509	0	509	0	0
Planorbis		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gordiidae		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hirudinea		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hyallella		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aphidae		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 44. Detailed results of benthic samples from the outflow of Lake 224.

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
LAKE 224 OUTFLOW

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11
EPHEMEROPTERA												
Siphlonuridae												
Ameletus	N	0	0	0	0	0	0	0	0	0	0	0
Ephemerellidae												
Ephemerella	N	0	0	0	0	0	0	0	0	0	0	0
Heptageniidae												
Stenonema	N	0	0	0	0	0	0	0	0	0	0	0
Baetidae												
Baetis	N	0	0	0	0	0	0	0	0	0	0	0
Leptophlebiidae												
Leptophlebia	N	0	0	0	0	0	0	0	0	0	0	0
Ephemeridae												
Hexagenia	N	0	0	0	0	0	0	0	0	0	0	0
PLECOPTERA												
Leuctridae												
Leuctra	N	0	0	0	0	0	0	0	0	0	0	0
Nemouridae												
Nemoura	N	0	0	0	0	0	0	0	0	0	0	0
Capnidae												
Allocapnia	N	0	0	0	0	0	0	0	0	0	0	0
DIPTERA												
Chironomidae												
Pentaneurini	P	0	0	0	0	0	0	0	0	0	0	0
Paramerina	L	0	0	0	0	0	0	0	0	0	0	0
Ablabesmyia	L	509	0	2035	0	0	2035	0	0	0	0	0
Macropelopiini												
Procladius	L	0	1018	0	0	0	0	1018	1018	0	1018	0
Natarsia	L	0	0	0	0	0	0	0	0	0	0	509
Chironomini	P	0	0	0	0	0	0	1018	509	0	0	0
"	L	0	0	0	0	0	0	0	0	0	0	0
Polypedilum	L	509	0	1018	0	0	1018	0	509	1526	3053	0
Chironomus	L	0	0	0	0	0	0	0	0	0	0	0
Paracladopelma	L	0	0	0	0	0	0	0	0	0	0	0
Pseudochironomus	L	0	0	0	0	0	0	0	0	0	0	0
Microtendipes	L	0	0	0	0	0	0	0	0	0	0	0
Tanytarsini	P	0	0	2067	0	0	127	7187	795	254	32	1018
Tanytarsus	L	7123	4070	17331	2035	0	4070	22451	9254	4070	16313	10176
Rheotanytarsus	L	0	0	0	0	0	0	0	0	1018	2035	0
Micropsecta	L	0	1018	3053	0	0	0	3053	2035	509	4070	3053
Corynoneurini	P	0	0	0	0	0	0	32	1526	0	0	0
Thienemanniella	L	0	0	0	0	0	0	0	0	0	0	0
Corynoneura	L	0	0	0	0	0	0	0	0	0	0	0

Table 44 cont'd

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
LAKE 224 OUTFLOW

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11
DIPTERA cont'd												
Chironomidae												
Orthocladiini	P	0	0	0	0	0	0	1018	509	0	0	0
Cricotopus	L	0	0	0	2035	1018	1018	1018	0	0	1018	0
Synorthocladius	L	0	0	0	0	0	0	0	0	0	0	0
Pseudocricotopus	L	0	0	0	0	0	0	0	0	0	0	0
Eukiefferiella	L	0	0	0	0	0	0	0	0	0	0	0
Parametriocnemus	L	0	0	0	0	0	0	0	0	0	0	0
Psectrocladius	L	0	0	0	0	0	0	0	0	0	0	0
Pseudosmittia	L	0	0	0	0	0	0	0	509	509	0	0
Simuliidae												
Simulium	L	16282	0	0	2035	0	0	13229	28525	509	1018	0
"	P	0	0	0	0	0	0	0	0	0	0	0
Prosimulium	L	0	0	0	0	0	0	0	0	0	0	0
"	P	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0
Ectemnia	L	0	0	0	0	0	0	0	0	0	0	0
Athericidae												
Atherix	L	0	0	0	0	0	0	0	0	0	0	0
Ceratopogonidae												
Culicoides	L	2035	0	4070	3053	0	1018	3053	1526	3562	3053	509
Empididae	L	0	0	0	0	0	0	0	0	0	0	0
Stratiomyidae	L	0	0	0	32	0	64	32	0	0	32	0
Tipulidae	L	0	0	0	0	0	0	0	0	0	0	0
Muscidae	L	0	0	0	0	0	0	0	0	0	0	0
Tabanidae	L	0	0	0	0	0	0	1018	0	0	0	0
TRICHOPTERA												
Philopotamidae												
Chimarra	L	0	0	0	0	0	0	0	0	0	0	0
Psychomyiidae												
Psychomia	L	0	0	0	0	0	0	0	0	0	0	0
Polycentropidae												
Polycentropus	L	0	0	0	0	0	0	0	0	0	0	0
"	P	0	0	0	0	0	0	0	0	0	0	0
Hydropsychidae												
Hydropsyche	L	32	0	0	0	0	0	0	32	0	0	0
Macronema	L	0	0	0	0	0	32	32	64	0	0	0
"	P	0	0	0	0	0	0	0	0	0	0	0
Glossosmatidae												
Glossosoma	L	0	0	0	0	0	0	0	0	0	0	0
Brachycentridae												
Brachycentrus	L	0	0	0	0	0	0	0	0	0	0	0
Lepidostomatidae												
Lepidostoma	L	0	0	0	0	0	0	0	0	0	0	0

Table 44 cont'd

BENTHOS ABUNDANCE BY TAXA
(numbers per square metre)
LAKE 224 OUTFLOW

TAXA	LIFE STAGE	CORE 1	CORE 2	CORE 3	CORE 4	CORE 5	CORE 6	CORE 7	CORE 8	CORE 9	CORE 10	CORE 11
TRICHOPTERA cont'd												
Limnephilidae												
Neophylax	L	0	0	0	0	0	0	0	0	0	0	0
Platycentropus	L	0	0	0	0	0	0	0	0	0	0	0
Hydatophylax	L	0	0	0	0	0	0	0	0	0	0	0
Hydroptilidae												
Oxyethira	L	0	0	0	0	0	0	0	0	0	0	0
Molannidae												
Molanna	L	0	0	0	0	0	0	0	0	0	0	0
Leptoceridae												
Nectopsyche	L	0	0	0	0	0	0	0	0	0	0	0
Oecetis	L	0	0	0	0	0	0	0	0	0	0	0
COLEOPTERA												
Elmidae												
Stenelmis	L	0	0	0	0	0	0	0	0	0	0	0
"	A	0	0	0	0	0	0	0	0	0	0	0
ODONATA												
Aeshnidae												
Aeshna	N	0	0	0	0	0	0	32	0	0	0	0
Orthemis	N	0	0	0	0	0	0	0	0	0	0	0
Dorocordulia	N	0	0	0	0	0	0	0	0	0	0	0
Libellulidae												
Libellula	N	0	0	0	0	0	0	0	0	0	0	0
Cordulegastridae												
Cordulegastor	N	0	0	0	0	0	0	0	0	0	0	0
Omphiogomphus		0	0	0	0	0	0	0	0	0	0	0
MISCELLANEOUS												
Nematoda		1018	0	0	3053	6106	11194	1018	0	509	3053	541
Oligochaeta		541	2099	3053	2035	2035	2035	1018	0	1018	32	32
Cyclopoida		0	0	0	0	0	0	0	0	0	0	0
Harpacticoida		0	0	0	0	1018	1018	0	0	0	0	0
Ostracoda		0	1018	0	1018	2035	0	1018	0	0	0	0
Acarnina		0	0	0	0	0	0	0	0	0	0	0
Collembola		0	0	0	0	0	0	0	0	0	0	0
Lepomis		0	0	0	0	0	0	0	0	0	0	0
Sphaerium		3562	1018	0	1018	0	0	2035	32	0	0	0
Planorbis		0	0	0	0	0	0	0	0	0	0	0
Gordiidae		0	0	0	0	0	0	0	0	0	0	0
Hirudinea		0	0	0	0	0	0	0	0	0	0	0
Hyallella		0	0	0	0	0	0	0	0	0	0	0
Aphidae		0	0	0	0	0	0	0	0	0	0	0